

Cinema 8 RS 232 commands

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This document describes the RS232 protocol for normal end-user operations and some test specific features.

Technical Specification of the RS232 Port

- 9600bps

- 8 data bits, one stop bit, no parity

- binary transmission, no flow control

-

Input commands

Single Byte User Commands

The following commands are all single bytes sent to the RS-232 port. They create various output data depending on the system status, so a comprehensive output data feedback cannot be given. The reception of these commands must be first activated by sending **RS_ENABLE_CONTROL** command before each command. See *Special Commands* section below

UI_DUMMY 1

REMOTE_CONTROL_PLUS 2

REMOTE_CONTROL_MINUS 3

REMOTE_CONTROL_PLUSREPEAT 4

REMOTE_CONTROL_MINUSREPEAT 5

UI_STANDBY_TOGGLE 6

UI_MUTE 7

UI_SOURCEPLUS 8

UI_SOURCEMINUS 9

UI_MODEMINUS 10

UI_MODEPLUS 11

UI_COMPRESSION_TOGGLE 12

UI_AUDIO_IN1 13

UI_AUDIO_IN2 14

UI_AUDIO_IN3 15

UI_AUDIO_IN4 16

UI_AUDIO_IN5 17

UI_AUDIO_IN6 18
UI_AUDIO_IN7 19
UI_AUDIO_IN8 20
FRONTPANEL_CONTROL_PLUS 21
FRONTPANEL_CONTROL_MINUS 22
UI_NOISE 23
UI_LEVEL 24
UI_DELAY 25
UI_TAPEMON_STICKY_TOGGLE 26
UI_THX 27
UI_F1 28
UI_F2 29
UI_F3 30
UI_TAPEMON_NONSTICKY_TOGGLE 31
UI_MUTE_ON 32
UI_MUTE_OFF 33
UI_STANDBY 34
UI_WAKEUP 35
UI_NORMAL 36
UI_COMPRESSION_ON 37
UI_COMPRESSION_OFF 38
UI_TAPEMON_OFF 30
UI_TAPEMON_STICKY_ON 40
UI_TAPEMON_NONSTICKY_ON 41
UI_MONO 42
UI_STEREO 43
UI_PROLOGIC 44
UI_MUSIC1 45
UI_MUSIC2 46
UI_MUSIC3 47
UI_MUSIC4 48
REMOTE_VOLUME_PLUS 49
REMOTE_VOLUME_MINUS 50
REMOTE_VOLUME_PLUSREPEAT 51
REMOTE_VOLUME_MINUSREPEAT 52
FRONTPANEL_VOLUME_PLUS 53
FRONTPANEL_VOLUME_MINUS 54
UI_MONO_TOGGLE 55
UI_PROLOGIC_TOGGLE 56
UI_MUSIC1_TOGGLE 57
UI_MUSIC2_TOGGLE 58
UI_MUSIC3_TOGGLE 59
UI_MUSIC4_TOGGLE 60
UI_LEFT 61
UI_CENTER 62
UI_RIGHT 63
UI_RIGHT_SURROUND 64
UI_LEFT_SURROUND 65
UI_SUBWOOFER 66
UI_SETUP_STEP 67
UI_BASS_PLUS 68
UI_BASS_MINUS 69

UI_TREBLE_PLUS 70
UI_TREBLE_MINUS 71
UI_AUDIO_IN9 72
UI_AUDIO_IN10 73
UI_AUDIO_IN11 74
UI_AUDIO_IN12 75
UI_AUDIO_IN13 76
UI_AUDIO_IN14 77
UI_AUDIO_IN15 78
UI_AUDIO_IN16 79
UI_AUDIO_IN17 80
UI_AUDIO_IN18 81
UI_AUDIO_IN19 82
UI_AUDIO_IN20 83
UI_AUDIO_IN21 84
UI_AUDIO_IN22 85
UI_AUDIO_IN23 86
UI_AUDIO_IN24 87
UI_AUDIO_IN25 88
UI_AUDIO_IN26 89
UI_AUDIO_IN27 90
UI_AUDIO_IN28 91
UI_AUDIO_IN29 92
UI_AUDIO_IN30 93
UI_AUDIO_IN31 94
UI_AUDIO_IN32 95
UI_SPEAKER 96
UI_SUBWOOFER_PLUS 97
UI_SUBWOOFER_MINUS 98
UI_CINE_EQ_TOGGLE 99
UI_AUDIO_IN_EXT71 100
UI_TRIM_PLUS 101
UI_TRIM_MINUS 102
UI_OSD_SETUP 103
UI_CURSOR_UP 104
UI_CURSOR_DOWN 105
UI_CURSOR_LEFT 106
UI_CURSOR_RIGHT 107
UI_CURSOR_ENTER 108
UI_ESCAPE 109
UI_CURSOR_UP_REPEAT 110
UI_CURSOR_DOWN_REPEAT 111
UI_CURSOR_LEFT_REPEAT 112
UI_CURSOR_RIGHT_REPEAT 113
UI_OSD_SETUP_STEP 114
UI_TONE_CTRL 115
UI_AUDIO_SOURCE_CTRL 116
UI_VIDEO_SOURCE_CTRL 117
UI_MULTIROOM_CTRL 118
UI_MODE_CTRL 119
UI_SOURCE_CTRL 120
UI_BRIGHTNESS 121
UI_OSD_STATUS 122
UI_SYSTEM_SELECT 123
UI_PRESET1 124

UI_PRESET2 125
UI_PRESET3 126
UI_PRESET4 127
UI_PRESET5 128
UI_CENTER_PLUS 129
UI_CENTER_MINUS 130
UI_SURROUND_PLUS 131
UI_SURROUND_MINUS 132
UI_BASS_MIX_TOGGLE 133
UI_TRIM_PLUS_REPEAT 134
UI_TRIM_MINUS_REPEAT 135
UI_AUDIO_IN_EXT71_TOGGLE 136
UI_VIDEO_DISPLAY_MODE 137
UI_EXTERNAL_BRIGHTNESS 138
UI_ZONE_VOLUME_PLUS 139
UI_ZONE_VOLUME_MINUS 140
UI_ZONE_SOURCE_PLUS 141
UI_PHONES_VOLUME_PLUS 142
UI_PHONES_VOLUME_MINUS 143
UI_INPUT_SEARCH 144
UI_FRONT_PANEL_LOCK_TOGGLE 145
UI_TRIM_MODE_PLUS 146
UI_TRIM_MODE_MINUS 147
UI_SYSTEM_OFF_TOGGLE 148
UI_HOME 149
UI_TUNER_SEEK_UP 150
UI_TUNER_SEEK_DOWN 151
UI_TUNER_REVIEW 152
UI_VIDEO_DISPLAY_ZONE 153
UI_MAIN_VOLUME_PLUS 154
UI_MAIN_VOLUME_MINUS 155
UI_BASS_MIX_ON 156
UI_BASS_MIX_OFF 157
UI_ZONE_MUTE_ON 158
UI_ZONE_MUTE_OFF 159
UI_PROLOGIC2_MOVIE 160
UI_PROLOGIC2_MUSIC 161
UI_DTSES_NEO6 162
UI_DTSES_MATRIX61 163
UI_DIRECT 164
UI_ZONE_MUTE_TOGGLE 165
UI_REMOTE_MULTIROOM_CONTROL 166
UI_DTSES_NEO6_MUSIC 167

Multi Byte User Commands

The following commands need two or more bytes: <command> <data1> [<data2>] ...
The reception of these commands must be first activated by sending **RS_ENABLE_CONTROL** command before each command! See *Special Commands* section below.

Command Data Description

180 Sets main zone volume UI_SET_VOLUME

10...100 main zone volume: 10 = -90dB, 100 = 0dB

181 Selects component video input UI_SET_COMP_VIDEO

0...3 component video input: 0 = Off, 1 = Component1, etc.

182 Sets zone B volume UI_SET_ZONE_VOLUME

11...100 Zone B volume: 11 = -89dB, 100 = 0dB

183 Selects zone B source UI_SET_ZONE_SOURCE

1...16 Zone B source

184 Sets PL2 parameters

Note: Parameters can be read without write by sending invalid data bytes, for example by setting all data bytes to 255. See the output data description below.

0/1 Panorama: 0 = Off, 1 = On

UI_SET_PL2_PARAMETERS

0...7 Width: 0 = Narrow, 7 = Wide

0...6 Dimension: 0 = Front biased, 6 = Max surround

216 Response to the read command

0/1 Panorama

0...7 Width

Output data

0...6 Dimension

Special Commands

The following commands need one, two or several bytes: <command> [<data>] [<data>] ...

Command Data Description

224

82

83

RS_ENABLE_CONTROL

33

Enables the reception of most RS232 commands

Reception is deactivated after every received command, so the command must be sent again before the next command.

RS_DISABLE_CONTROL

225 Disables the reception of RS232 commands. This command is seldom needed as control is usually disabled after every RS command.

RS_QUERY_SYSTEM_STATUS

227 Request for various status information. No need to enable RS control. This command sends out the information described below.

223 Header

255 Header EOT

RS_VOLUME (see **Output data** section)

RS_MUTE (see **Output data** section)

RS_AUDIO_SOURCE (see **Output data** section)

RS_VIDEO_SOURCE (see **Output data** section)

RS_OPER_MODE (see **Output data** section)

RS_ZONE_AUDIO_SOURCE (see **Output data** section)
RS_ZONE_VIDEO_SOURCE (see **Output data** section)
RS_ZONE_VOLUME (see **Output data** section)
RS_ZONE_MUTE (see **Output data** section)
RS_DIMMER (see **Output data** section)
RS_TAPEMONITOR (see **Output data** section)
RS_STEREO_MODE (see **Output data** section)
RS_SIGNAL_TYPE (see **Output data** section)
RS_SEND_CHANNEL_INFO (see **Output data** section)
RS_AUDIO_INPUT_TYPE (see **Output data** section)
RS_COMPRESSION (see **Output data** section)
RS_CINEEQ (see **Output data** section)
RS_THX (see **Output data** section)
RS_VIDEO_INPUT_TYPE (see **Output data** section)
RS_BASS (see **Output data** section)
RS_TREBLE (see **Output data** section)
RS_CENTER (see **Output data** section)
RS_SURROUND (see **Output data** section)
RS_SUBWOOFER (see **Output data** section)
RS_TRIGGER1 (see **Output data** section)
RS_TRIGGER2 (see **Output data** section)

Output data

For the exact output see the command description of the each command on the right
RS_TV_SYSTEM (see **Output data** section)

RS_QUERY_VERSION

229 Sends out the software version number. RS control must be enabled first.

219

1...255 version number MSB (3.12)
0...255 version number LSB (3.12)

Output data

0...255 Customer/product ID

230 Writes a byte to the EEPROM

See *Appendix 1* for more information.

0...255 MSB address byte
0...255 LSB address byte

RS_STORE_EEPROM

0...255 Stored data

218 Output data

0/1 0 = write unsuccessful, 1 = write successful

231 Reads a byte from the EEPROM. See *Appendix 1* for more information.

0...255 MSB address byte

RS_READ_EEPROM

0...255 LSB address byte

217 Output data

0...255 Byte read from the EEPROM

Commands for Testing Purposes

The following commands need one or two bytes: <command> [<data1>]

The reception of these commands must be first activated by sending **RS_ENABLE_CONTROL** command before each command. See *Special Commands* section above.

Command Data Description

226

- 0 = Balanced input bypass off
- 1 = Balanced input bypass on
- 2 = Microphone off
- 3 = Microphone on
- 4 = Button ID transmission on
- 5 = VFD test pattern 1
- 6 = VFD test pattern 2
- 7 = VFD test pattern 3
- 8 = Mute Tuner
- 9 = Unmute Tuner
- 10 = Send Tuner test signals
- 11 = Read Tuner test signals, *see RS_TEST_DATA in Output Data section below*
- 12 = Set Tuner PLL
- 13 = Clear Tuner PLL
- 14 = PAL blueback

RS_TEST_OPERATIONS

- 0...
- 15 = NTSC blueback
- 228 Lights a LED.** Switches off all other LED's. **RS_LIGHT_LED**
- 0... User interface LED ID

Output data

The following data is sent out to RS port whenever the status of the current parameter or function is changed. The output data consists of at least three bytes: <command> <data> <EOT>. For example when the main zone volume is changed to -25dB, the following three bytes are sent out: 225/75/255.

Command Data Description

215 Channel information of the current audio signal

Channel info

- 000 = 1 + 1 (dual mono)
- 001 = 1/0
- 010 = 2/0
- 011 = 3/0
- 100 = 2/1
- 101 = 3/1
- 110 = 2/2
- bits 0 – 2 (LSB):
- 111 = 3/2
- bit 3 0 = no LFE, 1 = LFE
- 00 = not indicated
- 01 = not Dolby Surround decoded
- 10 = Dolby surround decoded
- bits 4 – 5
- 11 = reserved

RS_SEND_CHANNEL_INFO

b00??????

bits 6 – 7 reserved

216 Pro Logic II parameters

0/1 Panorama: 0 = Off, 1 = On

0...7 Width

RS_SEND_PL2_PARAMETERS

0...6 Dimension

217 The contents of the EEPROM memory location. This command is a response only for the RS_READ_EEPROM command

RS_SEND_READ_EEPROM

0...255 Data byte read from the EEPROM

218 A reply to the RS_STORE_EEPROM command RS_SEND_STORE_EEPROM

0/1 0 = write unsuccessful, 1 = write successful

219 A reply to the RS_QUERY_VERSION command

1...255 Major version number (3.12)

0...255 Minor version number (3.12)

RS_SEND_VERSION

0...255 Customer/product ID

220 A reply to the RS_TEST_OPERATIONS command

0/1 Scanning signal

0/1 MPX signal

RS_TEST_DATA

0...255 Signal strength

221 Sends the button ID pressed. The button ID is HW button ID, not Titan button ID.

RS_BUTTON_ID

1...32 Button ID

224 Send the status of the headphones RS_HEADPHONES

0/1 Headphones connected (1) or not (0)

225 Main zone volume RS_VOLUME

10...120 Volume: 10 = -90dB, 100 = 0dB, 115 = +15dB

226 Status of the main zone user mute RS_MUTE

0/1 Main zone mute: 0 = unmuted, 1 = muted

RS_AUDIO_SOURCE 227 Current main zone source

1...64 Main zone source: 1...16 = normal source, 62 = internal tuner, 63 = balanced audio in, 64 = external 7.1 input

228 The current main zone composite/S-Video video source.

Even when audio (7-16) source is selected, the video input of the last selected video source remains active, which is indicated by this command.

RS_VIDEO_SOURCE

1...6 Last selected video source

229 Operating mode RS_OPER_MODE

0/1 0 = standby, 1 = on

230 Zone B source RS_ZONE_AUDIO_SOURCE

1...16

231 Zone B video source. Even when audio (7-16) source is selected, the video input of the last selected video source remains active, which is indicated by this command.

RS_ZONE_VIDEO_SOURCE

1...6

232 Volume of zone B RS_ZONE_VOLUME

10...115 Volume: 10 = -90dB, 100 = 0dB, 115 = +15dB

233 Status of zone B mute RS_ZONE_MUTE

0/1 0 = unmuted, 1 = muted

234 VFD brightness RS_DIMMER

0/1 0 = bright, 1 = dimmed

235 Tape Monitor status RS_TAPEMONITOR

0/1 0 = Tape Monitor off, 1 = Tape Monitor on

236 Current post processing mode

0 = Direct (Stereo with 2 channel audio material)

1 = Dolby Pro Logic

2 = Natural

3 = Club

4 = Concert

5 = Stadium

6 = Party

7 = Mono downmix

8 = Custom music mode

9 = Surround 6.1

10 = Custom music mode

11 = *not used*

12 = Stereo downmix

13 = Pro Logic 2 Movie

14 = Pro Logic 2 Music

15 = Dolby Digital EX

16 = Neo:6 Cinema

17 = DTS-ES Matrix

18 = Hall

19 = Church

RS_STEREO_MODE

0...17

20 = Neo:6 Music

237 Current audio signal

0 = <reserved>

1 = Digital zero signal (currently not used)

2 = Digital PCM

3 = Dolby Digital

4 = DTS

RS_SIGNAL_TYPE

0...10

5 = MPEG

6 = Noise (generated by the DSP)

7 = Analog

8 = Digital Error (unrecognized or corrupted digital signal)

9 = DTS-ES non-discrete

10 = DTS-ES Discrete

238 Audio input type of the current source

0 = Non-balanced Analog

1 = Coaxial

2 = Optical

3 = RF Demodulator (AC-3)

4 = AES/EBU

RS_AUDIO_INPUT_TYPE

0...5

5 = Balanced Analog

239 Late Night compression status RS_COMPRESSION

0/1 0 = compression off, 1 = compression on

240 Cine EQ status RS_CINEEQ

0/1 0 = Cine EQ off, 1 = Cine EQ on

241 Type of the input video signal

0 = unknown / no input signal

1 = Composite

RS_VIDEO_INPUT_TYPE

0...2

2 = S-Video

242 Treble setting RS_TREBLE

0...24 0 = -12dB, 12 = 0dB, 24 = +12dB

243 Bass setting RS_BASS

0...24 0 = -12dB, 12 = 0dB, 24 = +12dB

244 Center trim level RS_CENTER

0...24 0 = -12dB, 12 = 0dB, 24 = +12dB

245 Surround trim level RS_SURROUND

0...24 0 = -12dB, 12 = 0dB, 24 = +12dB

246 Subwoofer trim level RS_SUBWOOFER

0...24 0 = -12dB, 12 = 0dB, 24 = +12dB

247 Trigger 1 status RS_TRIGGER1

0/1 0 = trigger inactive, 1 = trigger active

248 Trigger 2 status RS_TRIGGER2

0/1 0 = trigger inactive, 1 = trigger active

249 TV system of the video input signal RS_TV_SYSTEM

0...2 0 = unknown, 1 = PAL, 2 = NTSC

250 THX status

0 = THX off

1 = THX on

RS_THX

0/1/2

2 = THX-EX on

RS_EOT

255 Sent out as a last byte of each transmission from the serial port

Appendix 1 - RS_STORE_EEPROM and RS_READ_EEPROM

This appendix gives further information about RS_STORE_EEPROM and RS_READ_EEPROM commands. RS_STORE_EEPROM is used to store one byte to the EEPROM, where all user settings are stored. This commands lets third parties to configure setup values during installation. The command is not intended to change any values during normal operation, since the values are only stored to the EEPROM and are not automatically updated to the system. Some changes may not become effective until re-boot.

The address is calculated by the following formula: $address = MSB\ address * 256 + LSB\ address$

The table below has both MSB and LSB addresses already calculated

EXAMPLE

The analog sensitivity of the Source2 is set to -3dB:

- first send the RS_ENABLE_CONTROL <224><82><83><33>

- send the RS_STORE_EEPROM command <230>

- send the address <3><81>

- send the sensitivity <82>

Address Data description Data range

MSB LSB MSB+LSB

Balanced Source 80-96 80= Off, 81 = Video1, 82 = Video2 etc. 0 6 6

Balanced Bypass 80/81 80 = through DSP

81 = DSP bypassed

0 7 7

Bass Limiter 80-130 80 = 0dB, 130 = -50dB 0 8 8

BassLimiterSwitch 80/81 80 = Bass Limiter Off

81 = Limiter On

0 9 9

SpecialVFDBrightness

(only for some VFDs)

80-90 80 = dimmest, 90 = brightest 0 10 10

LDelay 80-115 80 = 0ms, 115 = 35ms 0 11 11

CDelay 80-115 80 = 0ms, 115 = 35ms 0 12 12

RDelay 80-115 80 = 0ms, 115 = 35ms 0 13 13

RsDelay 80-115 80 = 0ms, 115 = 35ms 0 14 14

LsDelay 80-115 80 = 0ms, 115 = 35ms 0 15 15

SubDelay 80-115 80 = 0ms, 115 = 35ms 0 16 16

LLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 17 17

CLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 18 18

RLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 19 19

RsLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 20 20

LsLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 21 21

SubLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB

0 22 22

LfeLevel 70-80 70=-10dB, 80=0dB 0 23 23

MainSpeakers 80/81 80=small, 81 = large 0 24 24

CenterSpeaker 80-82 80=no, 81=small, 82=large 0 25 25

SurroundSpeakers 80-82 80=no, 81=small, 82=large 0 26 26

Subwoofer 80/81 80=no, 81=yes 0 27 27

SpeakerSetup - *Obsolete, do not use* 0 28 28

Volume 90-195 90=-90dB, 180=0dB, 195=+15dB 0 29 29

Input1Mode 80...

0 = Mono

1 = Stereo

2 = Direct

3 = Dolby Pro Logic

4 = Music1

5 = Music2

6 = Music3

7 = Music4

8 = Music5

11 = Dolby Pro Logic II Movie
12 = Dolby Pro Logic II Music
13 = Dolby Digital EX
14 = Neo:6
15 = DTS-ES Matrix
19 = Music6
30 = DSP Bypass
0 30 30
InputxMode, x = 2 - 16 See above 0 31 - 45 31 - 45
DefaultTHXMode 81-83 81 =EX Off
82=EX On
83=EX Auto
0 46 46
DistanceUnit 80/81 80=meters
81=feet
0 47 47
PhonesVolumeOffset 60-90 60=-20dB, 80=0dB, 90=+10dB 0 48 48
SubFilter 80/81 80=SubFilter On
81=SubFilter Off
0 49 49
PLIIPanorama 80/81 80=Panorama Off
81=Panorama On
0 50 50
PLIIWidth 80-87 80=Min Width, 87=Max Width 0 51 51
PLIIDimension 80-86 80=Min Dimension, 86=Max Dim. 0 52 52
EffectWetness
for Pictor and later
80-84 80=Dry, 84=Wet 0 53 53
81=Boundary Gain Compensation On
0 54 54
81=ASA Off
0 55 55
0 56 56
SkipWelcome 0/1 0 = Welcome message displayed
1 = Welcome message not displayed
0 62 62
OsdMode 81/82 81 = Superimpose
82=Blueback
0 63 63
OsdTemporary 80-82 80=No temporary display
81=Simple
82=Full
0 64 64
OsdRouting 80-83 80=No OSD
81=OSD to composite
82=OSD to SVIDEO
83=OSD to both
0 65 65
OsdInputSelect 80-83 80=OSD Input Off
81=Svideo to OSD
82=Composite to OSD
83=Auto mode
0 66 66
TVSystem 1/2 Blueback TV mode
1=PAL
2=NTSC

0 77 77
OsdStyle 0-29 0=Factory default style
1-29=Preset Style
0 78 78
OsdBackgrColor 0-7 Background color for Factory default
style
0 = black
1 = blue
2 = green
3 = cyan
4 = red
5 = magenta
6 = yellow
7 = white
0 79 79
OsdCharColor 0-7 Character color, *see above for color
codes*
0 80 80
OsdErrorColor 0-7 Error line color, *see above for color
codes*
0 81 81
BackSpeakers 80-84 80=no back
81=one small back
82=one large back
83=two small backs
84=two large backs
0 101 101
RbLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB
0 102 102
LbLevel 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB
0 103 103
RbDelay 80-115 80 = 0ms, 115 = 35ms 0 104 104
LbDelay 80-115 80 = 0ms, 115 = 35ms 0 105 105
SubFreq 120/130/
140/150/
160/170/
180/190/
200/210/
220
120=40Hz, 220=140Hz 0 106 106

EnhancedBass 80/81 80=Enhanced bass On
81= Enhanced bass Off
0 107 107
Trigger1Source 80-106
80 = Trigger Off
(81-96, Source[1-16])
81=Source1
...
96=Source16
97 = Tuner selected
98 = External 7.1
99 = Balanced input
100 = System On

101 = Brightness
102 = Composite in
103 = S-VidEo in
104 = Composite/S-VidEo in
0 108 108
105 = Video source selected (1-6)
106 = Audio source selected (7-16)
Trigger1Polarity 80/81 80=negative 8
1=positive
0 109 109
Trigger1Delay 80-94
80 = 100ms
81 = 1s
82 = 2s
83 = 3s
84 = 5s
85 = 7s
86 = 10s
87 = 15s
88 = 20s
89 = 30s
90 = 45s
91 = 1min
92 = 1min30s
93 = 2min
94 = 3min
0 110 110
Trigger1Duration 80-96
80 = Infinity
81 = 10ms
82 = 100ms
83 = 1s
84 = 2s
85 = 3s
86 = 5s
87 = 7s
88 = 10s
89 = 15s
90 = 20s
91 = 30s
92 = 45s
93 = 1min
94 = 1min30s
95 = 2min
96 = 3min
0 111 111
Trigger2Source 80-106 *see Trigger1Source above* 0 112 112
Trigger2Polarity 80/81 80=negative
81=positive
0 113 113
Trigger2Delay 80-94 *see Trigger1Delay above* 0 114 114
Trigger2Duration 80-96 *see Trigger1Duration above* 0 115 115
ZoneVolume 90-195 90=-90dB, 180=0dB,195=+15dB 0 116 116
CurrentZoneInput 81-86 81=Source1, 86=Source16 0 117 117
Bass 68-92 68=-12dB, 80=0dB, 92=+12dB 0 118 118
Treble 68-92 68=-12dB, 80=0dB, 92=+12dB 0 119 119

WelcomeMessage ASCII code

All bytes are ASCII codes. 400-419 has the 20 characters of the first row and 420-439 of the second row

1 144-183 400-439

ShutdownMessage ASCII code

All bytes are ASCII codes. 440-459 has the 20 characters of the first row and 460-479 of the second row

1 184-223 440-479

ChannelNames ASCII code

All bytes are ASCII codes. The label of the Source1 is stored in 702-708 (seven characters), Source2 in 709-715, etc

2

3

190-255

0-45

702-767

768-813

SourceAnalogSensitivity 80-95 80=-5dB,85=0dB,95=+10dB (848 has the sensitivity for the Source1, 849 for Source2, etc.)

3 80-95 848-863

DigitalAssoc 80-88

80 = Digital input Off

81-88 = Digital input [1-8]

(864 has the digital input for the Source1, 865 for the Source2, etc.)

3 96-111 864-879

CompVideoAssoc 80-83

80 = Component video Off

81-83 = Component video [1-3]

(880 has the component video input for the Source1, 881 for the Source2, etc)

3 112-127 880-895

Preset1Center 68-92 68=-12dB, 80=0dB, 92=+12dB 4 0 1024

Preset1Surround *See above* 4 1 1025

Preset1Subwoofer *See above* 4 2 1026

Preset1Bass *See above* 4 3 1027

Preset1Treble *See above* 4 4 1028

Preset1Data - *reserved* 4 5-9 1029-1033

Preset2 *See Preset1*

structure

above

4 10-19 1034-1043

Preset3 *See Preset1*

structure

above

4 20-29 1044-1053

Preset4 *See Preset1*

structure

above

4 30-39 1054-1063

Preset5 *See Preset1*

structure

above

4 40-49 1064-1073

PresetAssoc 80-85

80=No preset, 81=Preset1, 82=Preset2,

etc.

(1074 has the Preset for the Source1, 1075 for the Source 2, etc.)

4 50-65 1074-1089

TunerFMPreSetAss1 *Not documented*
4 86-94 1110-1118
TunerAMPreSetAss1 *Not documented*
4 95-104 1119-1128
TunerFMPreSetFreq1 *Not documented*
4 106-123 1130-1147
TunerAMPreSetFreq1 *Not documented*
4 124-141 1148-1165
TunerBand *Not documented*
4 142 1166
TunerCurrentFMPreSet *Not documented*
4 143 1167
TunerCurrentAMPreSet *Not documented*
4 144 1168
TunerCountry *Not documented*
4 145 1169
TunerTuneMode *Not documented*
4 146 1170
RS_Mode *Not documented*
4 147 1171
TunerLabels *Not documented*
4
5
148-256
0-17
1172-1280
1281-1297
RS_IRConverter_mode *Not documented*
5 18 1298

Ch1_left_mix 0-200 0=-100%, 100=0%, 101=1%, 200=100% 5 20 1300
Ch9_center_mix *See above* 5 21 1301
Ch9_right_mix *See above* 5 22 1302
Ch9_rightsurr_mix *See above* 5 23 1303
Ch9_back_mix *See above* 5 24 1304
Ch9_leftsurr_mix *See above* 5 25 1305
Ch9_lfe_mix *See above* 5 26 1306
Ch9_sub_mix *See above* 5 27 1307
Ch10_left_mix *See above* 5 28 1308
Ch10_center_mix *See above* 5 29 1309
Ch10_right_mix *See above* 5 30 1310
Ch10_rightsurr_mix *See above* 5 31 1311
Ch10_back_mix *See above* 5 32 1312
Ch10_leftsurr_mix *See above* 5 33 1313
Ch10_lfe_mix *See above* 5 34 1314

Ch10_sub_mix See above 5 35 1315
Ch9_filter1_type 80-82 80=No filter
81=Lowpass
82=Highpass
5 36 1316
Ch9_filter2_type See Ch9_
filter1_type
5 37 1317
Ch9_filter1_freq 80-136 80=20, 81= 25, 82=30, 83=35, 84=40,
85=45, 86=50, 87=55, 88=60, 89=65,
90=70, 91=75, 92=80, 93=85, 94=90,
95=95, 96=100, 97=105, 98=110,
99=115, 100=120, 101=125, 102=130,
103=135, 104=140, 105=145, 106=150,
107=155, 108=160, 109=165, 110=170,
111=175, 112=180, 113=185, 114=190,
115=195, 116=200, 117=250, 118=500,
119=1000, 120=2000, 121=3000,
122=4000, 123=5000, 124=6000,
125=7000, 126=8000, 127=9000,
128=10000, 129=11000, 130=12000,
131=13000, 132=14000, 133=15000,
134=16000, 135=17000, 136=18000
5 38 1318
Ch9_filter2_freq See Ch9_
filter1_freq
5 40 1320
Ch10_filter1_type See Ch9_
filter1_type
5 42 1322
Ch10_filter2_type See Ch9_
filter1_type
5 43 1323
Ch10_filter1_freq See Ch9_
filter1_freq
5 44 1324
Ch10_filter2_freq See Ch9_
filter1_freq
5 46 1326
Ch9_delay 0-80 0=0ms, 80=80ms 5 48 1328
Ch9_level 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB
5 49 1329
Ch10_delay 0-80 0=0ms, 80=80ms 5 50 1330
Ch10_level 50-110 50=-15.0dB, 80=0.0dB, 81=0.5dB,
110=15.0dB
5 51 1331
Ch9_preset 80-? 80=User Aux9 settings, 81=AuxPreset1,
etc.
5 52 1332
Ch10_preset 80-? 80=User Aux10 settings,
81=AuxPreset1, etc.
5 53 1333