SSP-60 RS232 Document

Applies for sw-version 6.40 and above

Change history

Ver	Change date/prepared by	Remarks

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This document describes the SSP-60 RS232 protocol for normal end-user operations and some test specific features.

Technical Specification of the SSP-60 RS232 Port

- 9600bps
- 8 data bits, one stop bit, no parity
- binary transmission, no flow control

NOTE!

Not necessarily all commands and sub-commands work with all software releases. New commands are added continuously to this document as they are added to the software.

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.

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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
UI_SET_VOLUME	**1**	**180**	**Sets main zone volume**
	2	10…100	main zone volume: 10 = -90dB, 100 = 0dB
UI_SET_COMP_VIDEO	**1**	**181**	**Selects component video input**
	2	0…3	component video input: 0 = Off, 1 = Component1, etc.
UI_SET_ZONE_VOLUME	**1**	**182**	**Sets zone B volume**
	2	11…100	Zone B volume: 11 = -89dB, 100 = 0dB
UI_SET_ZONE_SOURCE	**1**	**183**	**Selects zone B souce**
	2	1…16	Zone B source
UI_SET_PL2_PARAMETERS	**1**	**184**	**Sets PL2 parameters (*Polaris or later*)** 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.
	2	0/1	Panorama: 0 = Off, 1 = On
	3	0…7	Center Width: 0 = Narrow, 7 = Wide
	4	0…6	Dimension: 0 = Front biased, 6 = Max surround
Output data	**1**	**216**	**Response to the read command**
	2	0/1	Panorama
	3	0…7	Center Width
	4	0…6	Dimension
UI_SET_NEO6_PARAMETERS	**1**	**185**	**Sets Neo6 parameters (*Polaris or later*)** 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.
	2	0…5	Center Image: 0 = Narrow, 5 = Wide
Output data	**1**	**251**	**Response to the read command**
	2	0…5	Center Image

Special Commands

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

Command	Data		Description
RS_ENABLE_CONTROL	**1**	**224**	**Enables the reception of most RS232 commands** Reception is deactivated after every received command, so this command must be sent again before the next command.
	2	82	
	3	83	
	4	33	
RS_DISABLE_CONTROL	**1**	**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	**1**	**227**	**Request for various status information**. No need to enable RS control. This command sends out the information described below.
Output data	**1**	**223**	Header
	2	255	Header EOT
	x	For the exact output see the command description of the each command on the right	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)
			RS_TV_SYSTEM (see ***Output data*** section)
RS_QUERY_VERSION	**1**	**229**	**Sends out the software version number**. RS control must be enabled first.
Output data	**1**	**219**	
	2	1…255	version number MSB (**6**.25)
	3	0…255	version number LSB (6.**25**)
	4	0…255	Customer/product ID
RS_STORE_EEPROM	**1**	**230**	**Writes a byte to the EEPROM** See *Appendix 1* for more information.
	2	0…255	MSB address byte
	3	0…255	LSB address byte
	4	0…255	Stored data
Output data	**1**	**218**	
	2	0/1	0 = write unsuccesful, 1 = write succesful
RS_READ_EEPROM	**1**	**231**	**Reads a byte from the EEPROM**. See Appendix 1 for more information.
	2	0…255	MSB address byte
	3	0…255	LSB address byte
Output data	**1**	**217**	
	2	0…255	Byte read from the EEPROM

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	
RS_SEND_CHANNEL_INFO	**1**	**215**	**Channel information of the current audio signal**	
	2	b00??????	Channel info	
			bits 0 – 2 (LSB):	000 = 1 + 1 (dual mono)
				001 = 1/0
				010 = 2/0
				011 = 3/0
				100 = 2/1
				101 = 3/1
				110 = 2/2
				111 = 3/2
			bit 3	0 = no LFE, 1 = LFE
			bits 4 – 5	00 = not indicated
				01 = not Dolby Surround decoded
				10 = Dolby surround decoded
				11 = reserved
			bits 6 – 7	reserved
RS_SEND_PL2_PARAMETERS	**1**	**216**	**Pro Logic II parameters**	
	2	0/1	Panorama: 0 = Off, 1 = On	
	3	0…7	Width	
	4	0…6	Dimension	
RS_SEND_READ_EEPROM	**1**	**217**	**The contents of the EEPROM memory location**. This command is a response only for the RS_READ_EEPROM command	
	2	0…255	Data byte read from the EEPROM	
RS_SEND_STORE_EEPROM	**1**	**218**	**A reply to the RS_STORE_EEPROM command**	
	2	0/1	0 = write unsuccesful, 1 = write succesful	
RS_SEND_VERSION	**1**	**219**	**A reply to the RS_QUERY_VERSION command**	
	2	1…255	Major version number (**6**.22)	
	3	0…255	Minor version number (6.**22**)	
	4	0…255	Customer/product ID	
RS_TEST_DATA	**1**	**220**	**A reply to the RS_TEST_OPERATIONS command**	
	2	0/1	Scanning signal	
	3	0/1	MPX signal	
	4	0…255	Signal strength	
RS_BUTTON_ID	**1**	**221**	**Sends the button ID pressed**. The button ID is HW button ID, not SSP-60 button ID.	

	2	1…40	Button ID
RS_HEADPHONES	1	**224**	**Send the status of the headphones**
	2	0/1	Headphones connected (1) or not (0)
RS_VOLUME	1	**225**	**Main zone volume**
	2	10…120	Volume: 10 = -90dB, 100 = 0dB, 115 = +15dB
RS_MUTE	1	**226**	**Status of the main zone user mute**
	2	0/1	Main zone mute: 0 = unmuted, 1 = muted
RS_AUDIO_SOURCE	1	**227**	**Current main zone source**
	2	1…64	Main zone source: 1…16 = normal source, 62 = internal tuner, 63 = balanced audio in, 64 = external 7.1 input
RS_VIDEO_SOURCE	1	**228**	**The current main zone composite/SVideo 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.
	2	1…6	Last selected video source
RS_OPER_MODE	1	**229**	**Operating mode**
	2	0/1	0 = standby, 1 = on
RS_ZONE_AUDIO_SOURCE	1	**230**	**Zone B source**
	2	1…16	
RS_ZONE_VIDEO_SOURCE	1	**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.
	2	1…6	
RS_ZONE_VOLUME	1	**232**	**Volume of zone B**
	2	10…115	Volume: 10 = -90dB, 100 = 0dB, 115 = +15dB
RS_ZONE_MUTE	1	**233**	**Status of zone B mute**
	2	0/1	0 = unmuted, 1 = muted
RS_DIMMER	1	**234**	**VFD brightness**
	2	0/1	0 = bright, 1 = dimmed
RS_TAPEMONITOR	1	**235**	**TapeMonitor status**
	2	0/1	0 = TapeMonitor off, 1 = TapeMonitor on
RS_STEREO_MODE	1	**236**	**Current post processing mode**
	2	0…17	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 = Matrix / Neo:6
			18 = Hall
			19 = Church
			20 = Neo:6 Music
RS_SIGNAL_TYPE	**1**	**237**	**Current audio signal**
	2	0…10	0 = <reserved>
			1 = Digital zero signal (currently not used)
			2 = Digital PCM
			3 = Dolby Digital
			4 = DTS
			5 = MPEG
			6 = Noise (generated by the DSP)
			7 = Analog
			8 = Digital Error (unrecognized or corrupted digital signal)
			9 = DTS-ES Matrix
			10 = DTS-ES Discrete
RS_AUDIO_INPUT_TYPE	**1**	**238**	**Audio input type of the current source**
	2	0…5	0 = Non-balanced Analog
			1 = Coaxial
			2 = Optical
			3 = RF Demodulator (AC-3)
			4 = AES/EBU
			5 = Balanced Analog
RS_COMPRESSION	**1**	**239**	**Late Night compression status**
	2	0/1	0 = compression off, 1 = compression on
RS_CINEEQ	**1**	**240**	**Cine EQ status**
	2	0/1	0 = Cine EQ off, 1 = Cine EQ on
RS_VIDEO_INPUT_TYPE	**1**	**241**	**Type of the input video signal**
	2	0…2	0 = unknown / no input signal
			1 = Composite
			2 = SVideo
RS_TREBLE	**1**	**242**	**Treble setting**
	2	0…24	0 = -12dB, 12 = 0dB, 24 = +12dB
RS_BASS	**1**	**243**	**Bass setting**
	2	0…24	0 = -12dB, 12 = 0dB, 24 = +12dB
RS_CENTER	**1**	**244**	**Center trim level**
	2	0…24	0 = -12dB, 12 = 0dB, 24 = +12dB
RS_SURROUND	**1**	**245**	**Surround trim level**
	2	0…24	0 = -12dB, 12 = 0dB, 24 = +12dB
RS_SUBWOOFER	**1**	**246**	**Subwoofer trim level**

	2	0…24	0 = -12dB, 12 = 0dB, 24 = +12dB
RS_TRIGGER1	1	**247**	**Trigger 1 status**
	2	0/1	0 = trigger inactive, 1 = trigger active
RS_TRIGGER2	1	**248**	**Trigger 2 status**
	2	0/1	0 = trigger inactive, 1 = trigger active
RS_TV_SYSTEM	1	**249**	**TV system of the video input signal**
	2	0…2	0 = unknown, 1 = PAL, 2 = NTSC
RS_THX	1	**250**	**THX status**
	2	0/1/2	0 = THX off
			1 = THX on
			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 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>

Data description	Data range		Address		
			MSB	LSB	MSB+LSB
BalancedSource	80-96	80= Off, 81 = Video1, 82 = Video2 etc.	0	6	6
BalancedBypass	80/81	80 = through DSP 81 = DSP bypassed	0	7	7
BassLimiter	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
Input*x*Mode, x = 2 - 16	*See above*		0	31 - 45	31 - 45
THX EX Autoenable	80/81	80 = Off 81 = On	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
THXUltra2_BGC	80/81	80=Boundary Gain Compensation Off 81=Boundary Gain Compensation On	0	54	54
THXUltra2_ASA	80-82	80 = Speakers together 81 = Speakers close 82 = Speakers apart	0	55	55
THXUltra2_Sub	80/81	80=No THX Ultra2 Sub 81=THX Ultra2 Sub connected	0	56	56
Neo:6 Center Image	80-85	80=Min width, 85=Max width	0	57	57
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 = SVideo in 104 = Composite/SVideo in 105 = Video source selected (1-6) 106 = Audio source selected (7-16) 107 = Zone B power	0	108	108
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
Preset1Subfoower	*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
Ch9_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. **Currently not used!**	5	52	1332
Ch10_preset	80-?	80=User Aux10 settings, 81=AuxPreset1, etc. **Currently not used!**	5	53	1333