VP-796(A) / VP-797(A) / VP-798(A)

API Protocol

This manual details the protocol used to remotely control your VP-796(A) / VP-797(A) / VP-798(A) Scaler-Switcher.

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Table of Contents

Contents

1. Communication

1.1. API Call

Communication between the PC and the Scaler Board is through remote API calls and corresponding answers.

The syntax of the API calls always is:
[command] [function] [par1],[par2],[par3],[par4]<cr>

<cr> is carriage return, which is sent by terminal programs when pressing the return key.

When the command string is composed in proprietary software a hexadecimal 0x0D has to be appended, accordingly.

[command] and [function] are mandatory, parameters can be none to many depending on the function.

The current OSD action functions come with commands "get", “getnv”, "set" or "save". OSD action functions are such functions that can be issued through an OSD item.

Default parameters are stored in non-volatile memory (flash memory). At boot time these values are copied (cached) into program memory and used at run time from this volatile memory. A set call will change the parameter value in program memory only. To permanently store the value in non-volatile memory, such that it is used the next time the box is powered up, a corresponding save call has to be issued. With a get call the value from volatile program memory is peeked. With getnv the value from non-volatile (flash memory) is peeked.

Examples:

OSD Action Function Text (ASCII)	Hexadecimal Values
get brightness<cr>	67 65 74 20 62 72 69 67 68 74 6e 65 73 73 0d
getnv brightness<cr>	67 65 74 6e 76 20 62 72 69 67 68 74 6e 65 73 73 0d
set brightness 50<cr>	73 65 74 20 62 72 69 67 68 74 6e 65 73 73 20 35 30 0d
save brightness<cr>	73 61 76 65 20 62 72 69 67 68 74 6e 65 73 73 0d

Special functions always have the command "sys".

Blanks within parameters are admissible, that is why parameters are delimited by commas. If a comma within a parameter is needed, this is done with a backslash.

Example:

Special Function Text (ASCII)	Hexadecimal Values
sys slvcmd_write_textedit 1,0,WE EAT\,GRANDPA<cr>	73 79 73 20 73 6c 76 63 6d 64 5f 77 72 69 74 65 5f 74 65 78 74 65 64 69 74 20 31 2c 30 2c 57 45 20 45 41 54 5c 2c 47 52 41 4e 44 50 41 0d

1.2. API Return

If everything went right the answer is either

OK<cr><lf>

in case of a set or save API call, or

OK,[parameter]<cr><lf>

in case of a get or getnv API call.

If something went wrong the answer is

ERROR,[text message]<cr><lf>

<cr><lf> is 0x0D 0x0A in hex. With this line end code communication on typical terminal emulations looks like this:

set brightness 50
OK
get brightness
OK,50
foo bar
ERROR,Unknown function
set brightness
ERROR,Wrong number of parameters

When sending more than one command in a row it's necessary to wait for the previous one to complete by waiting for the response code. Sending a new command without waiting for the response code from the previous one first will lead to the commands being received wrong, hence not understood and error messages returned.

1.3. TCP/IP Port

Port 30000 is used.

1.4. UART Connector and UART Configuration

The board UART connector is PL8.
PL8 Connector Type: 3-way 0.1” male, mating type 3-way 0.1” female

PL8 Pin	Signal name	Function
1	RXDA232	RS232 levels, Rx (from the HOST)
2	TXDA232	RS232 levels, Tx (to the HOST)
3	DGND	Ground

The board UART is configured to the following parameters:

Parameter	Value
Baudrate	**115200 Bits/second**
Stop Bits	1
Number of bits received/transmitted in the BYTE	8
Paritiy Bits	No Parity
Flow Control	Off

1.5. Examples

The following examples are used to explain how the API calls and protocol work:

1.) Change the Contrast Setting for runtime use. Increase the contrast (gain) by 10%.

OSD Action Function Text (ASCII)	Hexadecimal Values
set contrast 10<cr>	73 65 74 20 63 6f 6e 74 72 61 73 74 20 31 30 0d

(Expected) Return Message (ASCII)	Hexadecimal Values
OK<cr><lf>	4f 4b 0d 0a

2.) Save the Contrast Setting such that it is permanently stored in non-volatile memory (flash) and used the next time the system is reset or powered up again.

OSD Action Function Text (ASCII)	Hexadecimal Values
save contrast<cr>	73 61 76 65 20 63 6f 6e 74 72 61 73 74 0d

(Expected) Return Message (ASCII)	Hexadecimal Values
OK<cr><lf>	4f 4b 0d 0a

3.) Read back the Contrast Setting from non-volatile memory.

OSD Action Function Text (ASCII)	Hexadecimal Values
getnv contrast<cr>	67 65 74 6e 76 20 63 6f 6e 74 72 61 73 74 0d

(Expected) Return Message (ASCII)	Hexadecimal Values
OK,10<cr><lf>	4f 4b 2c 31 30 0d 0a

4.) Switch between inputs HDMI1 (current) and SDI1 (Index: 0).

OSD Action Function Text (ASCII)	Hexadecimal Values
set main_input 0<cr>	73 65 74 20 6d 61 69 6e 5f 69 6e 70 75 74 20 30 0d

(Expected) Return Message (ASCII)	Hexadecimal Values
OK<cr><lf>	4f 4b 0d 0a

5.) Rename a User (e.g. User 1 renamed to JOHN).

OSD Action Function Text (ASCII)	Hexadecimal Values
set user1_rename JOHN<cr>	73 65 74 20 75 73 65 72 31 5f 72 65 6e 61 6d 65 20 4a 4f 48 4e 0d

(Expected) Return Message (ASCII)	Hexadecimal Values
OK<cr><lf>	4f 4b 0d 0a

2. API Functions set, get, getnv and save

OSD action functions can be called with a **set, get, getnv and save** command. In the following tables the function and the parameters of a set call are listed. get, getnv and save are called without parameters.

Note: The OSD menu items are sliders, text, list box items or action items. If in doubt the range of a given command can be checked by operating the menu item manually. List box items start from index 0.

2.1. Input

Model	Function	Par1	
		Range	Description
VP-796	main_input	0 to 10	Main input channel selection: 0: DP, 1: HDMI 1, 2: HDMI 2, 3: HDBT, 4: IMX6, 5: DVI 6: VGA, 7: RGB/YPbPr 8: CVBS, 9: HDMI 3, 10: TESTPAT

Model	Function	Par1	
		Range	Description
VP-797	main_input	0 to 12	Main input channel selection: 0: 3G-SDI 1, 1: 3G-SDI 2, 2: DP, 3: HDMI 1, 4: HDMI 2, 5: HDBT, 6: IMX6, 7: DVI, 8: VGA, 9: RGB/YPbPr, 10: CVBS, 11: HDMI 3, 12: TESTPAT

2.2. Output

Model	Function	Par1	
		Range	Description
All	output_resolution	0 to 22	Output image resolution 0: 640x480p 1: 800x600p 2: 1024x768p 3: 1280x768p 4: 1280x800p 5: 1280x1024p 6: 1360x768p 7: 1366x768p 8: 1400x1050p 9: 1440x900p 10: 1600x1200p 11: 1680x1050p 12: 1920x1200p 13: 720x480i 14: 720x576i 15: 720x480p 16: 720x576p 17: 1280x720p 18: 1920x1080i 19: 1920x1080p 20: 2048x1080p 21: 2048x1200p 22: 2560x1080p 23: 2560x1440p 24: 2560x1600p 25: 3840x2160p 26: 4096x2160p

Model	Function	Par1	
		Range	Description
All	frame_rate	0 to 8	Output video frame rate. 0: 60 Hz 1: 59.94 Hz 2: 50 Hz 3: 48 Hz 4: 30 Hz 5: 29.97 Hz 6: 25 Hz 7: 24 Hz 8: 23.98 Hz 9: Auto

Model	Function	Par1	
		Range	Description
All	io_lock	0 to 2	Locking condition. 0: Off 1: Source 2: Genlock

Model	Function	Par1	
		Range	Description
All	frame_rate_50	0 to 1	Allow 50 Hz o/p frame rate. 0: No 1: Yes

Model	Function	Par1	
		Range	Description
All	frame_rate_48	0 to 1	Allow 48 Hz o/p frame rate. 0: No 1: Yes

Model	Function	Par1	
		Range	Description
All	frame_rate_30	0 to 1	Allow 30/29.97 Hz o/p frame rate. 0: No 1: Yes

Model	Function	Par1	
		Range	Description
All	frame_rate_25	0 to 1	Allow 25 Hz o/p frame rate. 0: No 1: Yes

Model	Function	Par1	
		Range	Description
All	frame_rate_24	0 to 1	Allow 24/23.98 Hz o/p frame rate. 0: No 1: Yes

Model	Function	Par1	
		Range	Description
All	output_colortemp	0 to 5	Output color temperature. 0: 3700K 1: 5500K 2: 6500K 3: 7500K 4: 9300K 5: 10000K

Model	Function	Par1	
		Range	Description
All	output_gamma	10 to 30	Output gamma value in units of one tenth, e.g. to apply a gamma of 2.2 the value 22 has to be written

Model	Function	Par1	
		Range	Description
VP-798	black_crush	0 to 255	Black crush value.

Model	Function	Par1	
		Range	Description
All	output_optimize	0 to 1	Consider display EDID blocks. 0: DVI/HDMI (deep color) 1: DVI forced (24 bit)

Model	Function	Par1	
		Range	Description
All	output_hdcp	0 to 1	Switch of HDCP support on HDMI/DVI/HDBT outputs. 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	dvi_out_csc	0 to 1	Force Color Space Conversion. 0: RGB 1: YPbPr

Model	Function	Par1	
		Range	Description
All	dvi_out_range	0 to 2	Greyscale range being used. 0: full 1: limited 2: auto

Model	Function	Par1	
		Range	Description
VP-798	outwin_size_enable	0 to 1	Enable per-edge sizing. 0: Off 1: On

Model	Function	Par1	
		Range	Description
VP-798	outwin_left_edge	Depends on output format and other edge values	Adjust the left edge of the output image in number of pixels. The image is horizontally scaled down accordingly.

Model	Function	Par1	
		Range	Description
VP-798	outwin_right_edge	Depends on output format and other edge values	Adjust the right edge of the output image in number of pixels. The image is horizontally scaled down accordingly.

Model	Function	Par1	
		Range	Description
VP-798	outwin_top_edge	Depends on output format and other edge values	Adjust the top edge of the output image in number of lines. The image is vertically scaled down accordingly.

Model	Function	Par1	
		Range	Description
VP-798	outwin_bottom_edge	Depends on output format and other edge values	Adjust the bottom edge of the output image in number of lines. The image is vertically scaled down accordingly.

2.3. Color

Model	Function	Par1	
		Range	Description
All	black	0 to 1	Black level offset. 0: 0 IRE 1: 7.5 IRE

Model	Function	Par1	
		Range	Description
All	brightness	-50 to 50	Brightness (black level) value

Model	Function	Par1	
		Range	Description
All	contrast	-50 to 50	Contrast value

Model	Function	Par1	
		Range	Description
All	color	-50 to 50	Saturation value

Model	Function	Par1	
		Range	Description
All	hue	-50 to 50	Hue value

Model	Function	Par1	
		Range	Description
All	red_offset	-512 to 512	Red offset (bias) value

Model	Function	Par1	
		Range	Description
All	green_offset	-512 to 512	Green offset (bias) value

Model	Function	Par1	
		Range	Description
All	blue_offset	-512 to 512	Blue offset (bias) value

Model	Function	Par1	
		Range	Description
All	red_gain	-512 to 512	Red gain value

Model	Function	Par1	
		Range	Description
All	green_gain	-512 to 512	Green gain value

Model	Function	Par1	
		Range	Description
All	blue_gain	-512 to 512	Blue gain value

Model	Function	Par1	
		Range	Description
All	input_colortemp	0 to 4	Output color temperature. 0: 3700K 1: 5500K 2: 6500K 3: 7500K 4: 9300K

Model	Function	Par1	
		Range	Description
All	input_gamma	10 to 30	Input gamma value in units of one tenth, e.g. to apply a gamma of 2.2 the value 22 has to be written

2.4. Geometry

Model	Function	Par1	
		Range	Description
All	main_picture_format	0 to 4	Change aspect ratio 0: Original 1: Full screen 2: Crop 3: Anamorphic 4: Theatrescope

Model	Function	Par1	
		Range	Description
All	main_overscan	0 to 10	Increase input scaling to generate an over scan.

Model	Function	Par1	
		Range	Description
All	ptz_enable	0 to 1	Enable Pan Tilt Zoom 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	ptz_setting	0 to 1	Select the scope of the PTZ setting 0: Use Globally 1: User per mode

Model	Function	Par1	
		Range	Description
All	ptz_pan	-500 to 500	Adjust the pan (left/right displacement) in 1/10 of percent of the image size.

Model	Function	Par1	
		Range	Description
All	ptz_tilt	-500 to 500	Adjust the tilt (top/bottom displacement) in 1/10 of percent of the image size.

Model	Function	Par1	
		Range	Description
All	ptz_zoom_h	250 to 4000	Adjust the horizontal zoom factor in 1/10 of percent.

Model	Function	Par1	
		Range	Description
All	ptz_zoom_v	250 to 4000	Adjust the vertical zoom factor in 1/10 of percent.

Model	Function	Par1	
		Range	Description
All	ptz_aspect	0 to 1	Aspect ratio lock setting. When aspect ratio is locked (on) the vertical scaling factor equals the horizontal scaling factor 0: On 1: Off

2.5. PiP

Supported by future software release

2.6. Video Wall

Model	Function	Par1	
		Range	Description
VP-798	multiple_unit_autozoom	0 to 1	Activate Autozoom 0: Off 1: On

Model	Function	Par1	
		Range	Description
VP-798	multiple_unit_width	1 to 4	Defines the number of displays set horizontally

Model	Function	Par1	
		Range	Description
VP-798	multiple_unit_height	1 to 4	Defines the number of displays set vertically

Model	Function	Par1	
		Range	Description
VP-798	multiple_unit_horizontal	0 to 3	Tile of the matrix to be processed by the unit

Model	Function	Par1	
		Range	Description
VP-798	multiple_unit_vertical	0 to 3	Tile of the matrix to be processed by the unit

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_left_border	Depends on output format	Edge blend area on the left side of the image in pixels

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_right_border	Depends on output format	Edge blend area on the right side of the image in pixels

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_top_border	Depends on output format	Edge blend area on the top of the image in lines

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_bot_border	Depends on output format	Edge blend area on the bottom of the image in lines

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_left_offset	Depends on output format	Offset of edge blend area on the left side of the image in pixels

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_right_offset	Depends on output format	Offset of blend area on the right side of the image in pixels

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_top_offset	Depends on output format	Offset of edge blend area on the top of the image in lines

Model	Function	Par1	
		Range	Description
VP-798	edge_blend_bot_offset	Depends on output format	Offset of the edge blend area on the bottom of the image in lines

2.7. Enhancement

Model	Function	Par1	
		Range	Description
All	sharpness	-4 to 4	Adjust sharpness filter.

Model	Function	Par1	
		Range	Description
All	detail_enhance	0 to 3	Adjust detail enhancement filter.

2.8. System

Model	Function	Par1	
		Range	Description
All	current_user	0 to 3	Determine current user (default names: USER1 to USER4)

Model	Function	Par1	
		Range	Description
All	user1_rename	Text with 9 ASCII characters	Change name of the USER1 slot. Note: Only capital letters, numerals, minus and blank are allowed in the text.

Model	Function	Par1	
		Range	Description
All	user2_rename	Text with 9 ASCII characters	Change name of the USER2 slot. Note: Only capital letters, numerals, minus and blank are allowed in the text.

Model	Function	Par1	
		Range	Description
All	user3_rename	Text with 9 ASCII characters	Change name of the USER3 slot. Note: Only capital letters, numerals, minus and blank are allowed in the text.

Model	Function	Par1	
		Range	Description
All	úser4_rename	Text with 9 ASCII characters	Change name of the USER4 slot. Note: Only capital letters, numerals, minus and blank are allowed in the text.

Model	Function	Par1	
		Range	Description
All	input_rename	Text with 9 ASCII characters	Change unit name. Default is VIDEOPROC.

Model	Function	Par1	
		Range	Description
All	inputX_rename X=1,2,…,16	Text with 9 ASCII characters	Change name of the X input channel. Note: Only capital letters, numerals, minus and blank are allowed in the text.

Model	Function	Par1	
		Range	Description
All	vga1_in_clock	Depends on input mode	Horizontal total pixel value of the VGA input

Model	Function	Par1	
		Range	Description
All	vga1_in_phase	0 to 31	Phase value of the VGA input

Model	Function	Par1	
		Range	Description
All	vga1_hadj	Depends on input mode	VGA input image horizontal position (front porch)

Model	Function	Par1	
		Range	Description
All	vga1_vadj	Depends on input mode	VGA input image vertical position (front porch)

Model	Function	Par1	
		Range	Description
All	vga1_in_cspace	0 to 1	VGA input color space 0: RGB 1: YPbPr

Model	Function	Par1	
		Range	Description
All	vga1_in_range	0 to 1	VGA input greyscale range 0: Full 1: Limited

Model	Function	Par1	
		Range	Description
All	vga1_edid_input	0 to 21	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	vga2_in_clock	Depends on input mode	Horizontal total pixel value of the RGB/YPbPr input

Model	Function	Par1	
		Range	Description
All	vga2_in_phase	0 to 31	Phase value of the RGB/YPbPr input

Model	Function	Par1	
		Range	Description
All	vga2_hadj	Depends on input mode	RGB/YPbPr input image horizontal position (front porch)

Model	Function	Par1	
		Range	Description
All	vga2_vadj	Depends on input mode	RGB/YPbPr input image vertical position (front porch)

Model	Function	Par1	
		Range	Description
All	vga2_in_sync	0 to 1	RGB/YPbPr synchronization scheme 0: Separate 1: SoG/SoY

Model	Function	Par1	
		Range	Description
All	vga2_in_cspace	0 to 1	RGB/YPbPr input color space 0: RGB 1: YPbPr

Model	Function	Par1	
		Range	Description
All	vga2_in_range	0 to 1	RGB/YPbPr input greyscale range 0: Full 1: Limited

Model	Function	Par1	
		Range	Description
All	Ccs	0 to 1	Activate cross color suppression on composite video signals 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	dp_in_cspace	0 to 2	Display Port input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	dp_in_range	0 to 2	Display Port input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	dp_dc	0 to 1	Display Port deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	dp_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	hdmi1_in_cspace	0 to 2	HDMI 1 input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi1_in_range	0 to 2	HDMI 1 input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi1_dc	0 to 1	HDMI 1 input deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi1_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	hdmi1_in_hdcp	0 to 1	HDMI 1 input HDCP support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi2_in_cspace	0 to 2	HDMI 2 input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi2_in_range	0 to 2	HDMI 2 input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi2_dc	0 to 1	HDMI 2 input deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi2_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	hdmi2_in_hdcp	0 to 1	HDMI 2 input HDCP support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdbt_in_cspace	0 to 2	HDBaseT input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	hdbt_in_range	0 to 2	HDBaseT input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	hdbt_dc	0 to 1	HDBaseT input deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdbt_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	hdbt_in_hdcp	0 to 1	HDMI 1 input HDCP support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	dvi_in_cspace	0 to 2	DVI input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	dvi_in_range	0 to 2	DVI input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	dvi_dc	0 to 1	DVI 1 input deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	dvi_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	dvi_in_hdcp	0 to 1	DVI input HDCP support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi3_in_cspace	0 to 2	HDMI3I input color space 0: RGB 1: YCbCr 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi3_in_range	0 to 2	HDMI 3 input greyscale range 0: Full 1: Limited 2: Auto

Model	Function	Par1	
		Range	Description
All	hdmi3_dc	0 to 1	HDMI 3 input deep color support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi3_edid	0 to 50	Set up the preferred timing in the unit´s EDID. Check list box through menu. 0: 1st entry, 1: 2nd entry …

Model	Function	Par1	
		Range	Description
All	hdmi3_in_hdcp	0 to 1	HDMI 3 input HDCP support 0: Off 1: On

Model	Function	Par1	
		Range	Description
All	hdmi_audio	0 to 5	Overwrite unit EDID audio capability information to signal a HDMI source to output audio as: 0: Full (unit default EDID) 1: Match Display 1 2: Match Display 2 3: S/PDIF friendly 4: SDI friendly, 2-ch 5: SDI friendly, 8-ch

Model	Function	Par1	
		Range	Description
All	test_pattern	0 to 14	Test Pattern selection: 0: Red Curtain 1: Green Curtain 2: Blue Curtain 3: Grey V Bars 4: Grey H Bars 5: Aspect Test 6: Multi Test 7: Warp Adjust 8: SMPTE 9: Pluge 10: Custom 1 11: Custom 2 12: Custom 3 13: Custom 4 14: Logo

Model	Function	Par1	
		Range	Description
All	test_tone	0 to 1	Associated test tone for Test Pattern 0: Off) 1: On

Model	Function	Par1	
		Range	Description
All	switching_transition	0 to 3	Switching scheme: 0: Freeze 1: Blank 2: Fast Fade 3: Slow Fade

Model	Function	Par1	
		Range	Description
All	language	0 to 2	Language selection: 0: (American) English 1: (British) English 2: Deutsch

Model	Function	Par1	
		Range	Description
All	keypad_lock	0 to 2	Lock keypad operation 0: Off (keypad operational) 1: Menu only (Menu key blocked) 2: All keys (all keys blocked)

Model	Function	Par1	
		Range	Description
All	menu_time	0 to 6	Menu time out: 0: 5 sec 1: 10 sec 2: 15 sec 3: 20 sec 4: 25 sec 5: 30 sec 6: infinite

Model	Function	Par1	
		Range	Description
All	lcd_backlight	0 to 10	LCD backlight brightness adjustment

Model	Function	Par1	
		Range	Description
All	jog_push_enable	0 to 1	Jog wheel push function emulating the Menu key 0: Off (no function) 1: On (Menu on push)

Model	Function	Par1	
		Range	Description
All	web_theme	0 to 1	Web color theme 0: Dark 1: Light

3. API Function func

Some OSD action functions are called without a parameter. These **func** commands are listed below.

3.1. Input

Model	Function	Description
VP-796		Switch to input:
	input_1_quickselect	DP
	input_2_quickselect	HDMI 1
	input_3_quickselect	HDMI 2
	input_4_quickselect	HDBT
	input_5_quickselect	IMX6
	input_6_quickselect	DVI
	input_7_quickselect	VGA
	input_8_quickselect	RGB/YPbPr
	input_9_quickselect	CVBS
	input_10_quickselect	HDMI 3
	input_11_quickselect	TESTPAT

Model	Function	Description
VP-798		Switch to input:
	input_1_quickselect	3G-SDI 1
	input_2_quickselect	3G-SDI 2
	input_3_quickselect	DP
	input_4_quickselect	HDMI 1
	input_5_quickselect	HDMI 2
	input_6_quickselect	IMX6
	input_7_quickselect	DVI
	input_8_quickselect	VGA
	input_9_quickselect	RGB/YPbPr
	input_10_quickselect	CVBS
	input_11_quickselect	HDMI 3
	input_12_quickselect	TESTPAT

Model	Function	Description
VP-797	input_1_quickselect input_2_quickselect input_3_quickselect input_4_quickselect input_5_quickselect input_6_quickselect input_7_quickselect input_8_quickselect input_9_quickselect input_10_quickselect input_11_quickselect input_12_quickselect input_13_quickselect	Switch to input: 3G-SDI 1 3G-SDI 2 DP HDMI 1 HDMI 2 HDBT IMX6 DVI VGA RGB/YPbPr CVBS HDMI 3 TESTPAT

3.2. Output

Model	Function	Description
VP-798	outwin_size_reset	Resets the output window size to the output image resolution.

3.3. Geometry

Model	Function	Description
All	ptz_reset	Resets the pan tilt zoom settings. The image is centered without being zoomed.

3.4. System

Model	Function	Description
All	vga1_reset	Resets the VGA mode to the original settings.

Model	Function	Description
All	vga2_reset	Resets the RGB/YPbPr mode to the original settings.

Model	Function	Description
All	factory_reset	Resets the unit to the original settings applied in production at the factory.

3.5. Standby

Model	Function	Description
All	on	If the unit is in standby mode, (indicated by the front LCD) the unit will start up. Sending "func on" to a unit that's already on, it will result in an "ERROR, Unknown function" message

Model	Function	Description
All	standby	If the unit is in live operation, it will be placed in standby mode. If a “get” command is sent to the unit, example “get contrast”, when it is in the standby mode, it will result in the “ERROR, Unknown function" message.

4. Function sys

Model	Function	Description
All	read_model	Reads the model number. Depending on the model number parameters of the set functions may vary, e.g. the index of the Test Pattern channel or any other input channel. The model number can be used to select certain control code written by a user.

Model	Function	Description
All	read_revision	Reads the firmware revision number. The firmware revision number can be used to adopt control code written by a user.