

## Dual Channel Encoder Realizes 4K/60p



**XVE9310 can transmit full HD dual channel videos with built-in TS Multiplexer. 4K contribution by cascading two XVE9310s.**

### Key Features

- Supports H.264/AVC HDTV/SDTV 2ch Encoding
- 4K Contribution by cascading two sets of XVE9310s (optional \*12)
- Supports Full HD Stereoscopic 3D Contribution
- Low Latency Mode (Minimum Latency 1 Frame) (optional \*10 \*11)
- Compressed Audio for Super Low Latency (optional \*5)
- Multiple Video Format Compatibility including  
1080i, 1080p, 720p, 576i, 480i  
1080p50 (optional \*3), 1080p59.94 (optional \*3), 1080p60 (optional \*3)
- Phase Aligned Audio
- Embedded Audio Features up to 8ch/4PES
  - MPEG-1 LayerII: Stereo x 4
  - MPEG-2 AAC/MPEG-4 AAC/HE-AAC: 5.1+Stereo
  - Multiple Audio Format Support up to 8ch/4PES Combinations
- Closed Caption: CEA-608, CEA-708, ARIB STD-B37
- Ancillary Data Transmission Support : Time Code, SMPTE RDD11, SMPTE2038, ARIB TR-B22, TR-B23, OP-47
- Supports Satellite Carrier ID
- Seamless Protection Switching with MVD5000, HVD9130 combination (\*Decoder optional)
- Seamless Bit Rate Change
- TS over IP Support with FEC
- Supports DHCP
- Easy Operation from Front Panel Display with Control Buttons as well as SNMP and WEB GUI via IP Network
- Supports BISS-1/E (optional \*9)
- Quick Boot-up (23sec)
- Redundant Power Supply
- RoHS Compliant

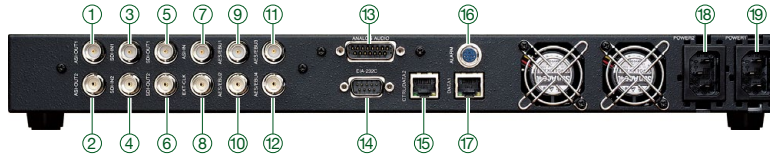
\* Please refer to the option table on the reverse side of this brochure.

## Front Panel



- ① Power switch 1
- ② Power switch 2
- ③ Status LEDs
- ④ Display panel
- ⑤ Operation buttons

## Rear Panel



- ① ASI-OUT1
- ② ASI-OUT2
- ③ SDI-IN1
- ④ SDI-IN2
- ⑤ SDI-OUT1
- ⑥ SDI-OUT2
- ⑦ ASI-IN
- ⑧ EXT-CLK
- ⑨ AES/EBU1
- ⑩ AES/EBU2
- ⑪ AES/EBU3
- ⑫ AES/EBU4
- ⑬ ANALOG AUDIO (optional)
- ⑭ EIA-232C
- ⑮ CTRL/DATA2
- ⑯ ALARM
- ⑰ DATA1
- ⑱ AC inlet 2
- ⑲ AC inlet 1 (optional)

## Specifications

Supported Standards	System	ISO/IEC13818-1 (MPEG-2 SYSTEM TRANSPORT STREAM)		Ancillary Data	Data Type	TIMECODE, SMPTE334M, SMPTE2038, ATSC A/72 ARIB TR-B22, ARIB TR-B23, ARIB STD-B37 *7	
	Video	ITU-T H.264   ISO/IEC 14496-10 AVC		Internal Test Signal	Video: Color Bar, Audio: 1kHz Sine wave		
	Audio	ISO/IEC11172-3 (MPEG-1 AUDIO LayerI) ISO/IEC13818-7 (MPEG-2 AAC) LC Profile ISO/IEC14496-3 subpart 4 (MPEG-4 AAC) LC Profile *4 ISO/IEC14496-3 Amendment 1 (MPEG-4 HE-AAC v1) *4 ISO/IEC14496-5:2001 Amendment 24:2009 (MPEG-4 AAC-ELD) *5 SMPTE302M-2002		TS Specifications	Output Interface	DVB-ASI : BNC x 2 lines (0.8Vp-p 75Ω) IP *8 : 100Base-TX/1000Base-T (RJ-45) x 2 lines (Category 5/5e/6) x 2 lines (Category 5/5e/6) RTP/JUDP/IP (SMPTE2022-2-2007/RFC2250, RFC3550), FEC (SMPTE2022-1-2007/Pro-MPEG COP#3 R2 method)	
		Video Format	1080I (1920/1440/1280/960x1080) @25Hz, 29.97Hz, 30Hz: SMPTE274M 1080P (1920/1440/1280/960x1080) @23.98Hz, 24Hz: SMPTE274M *2 1080P (1920/1440/1280/960x1080) @29.97Hz, 30Hz: SMPTE274M *3 1080P (1920/1440/1280/960x1080) @50Hz, 59.94Hz, 60Hz: SMPTE274M *3 *4:2:0 only 720P (1280x720) @50Hz, 59.94Hz, 60Hz: SMPTE296M 480I (720/352x480) @29.97Hz: SMPTE125M 576I (720/352x576) @25Hz: ITU-R BT.656-4		External Clock Input	Max. 160.000MHz (ARIB STD B-18 clock input compliant) BNC x 1 line (0.8Vp-p 75Ω)	
Video Specifications	Profile/Level	H.264/AVC	Profile: Main, High, High4:2:2 (8bit) Level: 4.2/4.1/4.0/3.2/3.0 Entropy: CABAC/CAVLC	Control Specifications	Stream Type	TS (188/204byte: No Reed-Solomon)	
		MPEG-2	-		Max. Multiplicity	Video 1, Audio max. 8, Ancillary Data max. 3, Total 12	
	Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)			Maximum TS Rate	160.000Mbps (internal setting in 1 kbps units)	
	Video Through Output	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)			Local Control	FL display (20 digits x 2) + operator switches (6 buttons)	
Audio Specifications	GOP Structure	H.264/AVC	M=1 to 3, N=1 to 30	Other	Remote Control	LAN 100Base-TX/1000Base-T (RJ-45)	
		MPEG-2	-		Maintenance I/O	LAN 100Base-TX/1000Base-T (RJ-45) (joint use with remote control)	
	Audio Input	AES/EBU (8ch) : BNC x 4 lines (1 Vp-p 75Ω) Embedded Audio (SDI1 8ch) : SMPTE299M, SMPTE272M Embedded Audio (SDI2 8ch) : SMPTE299M, SMPTE272M Analog (4ch) : D-SUB 15Pin (20KΩ, balanced) *1		Alarm Output	Buzzer (volume adjustable), relay contact outputs (2 NO/NC contacts)		
	Encoding Channels	AES max. 8ch, Embedded max. 8ch, Analog max. 4ch *1 (Selectable for each stereo)		External Reset	System reset by relay contact input (1 NO contact)		
	Encoding Method	MPEG-1 L2 (1ch (Mono), 2ch (DualMono), 2ch (Stereo)) max. 4PES MPEG-2 BC (1ch (Mono), 2ch (DualMono), 2ch (Stereo)) max. 4PES MPEG-2 AAC-LC (1ch (1/0), 2ch (1+1), 2ch (2/0), 4ch (4/0), 5.1ch (3/2/1), 6ch (6/0)) max. 2PES MPEG-4 AAC-LC (2ch (2/0), 5.1ch (3/2/1)) max. 2PES *4 MPEG-4 HE-AACv1 (2ch (2/0), 5.1ch (3/2/1)) max. 2PES *4 MPEG-4 AAC-ELD (2ch (2/0), 4ch (3/1), 5.1ch (3/2/1)) max. 2PES *5 SMPTE302M (2, 4, 6, 8 ch) max. 4PES		Device Monitor Control	SNMPv1, WEB Based GUI		
		Sampling Frequency	48kHz		TS encoding	BISS-1/E *9	
		Sampling Bit	16bit (MPEG-1, MPEG-2 BC, MPEG-2/4 AAC, MPEG-4 HE-AAC, MPEG-4 AAC-ELD), 16/20bit (SMPTE302M)		Dimensions (mm)	44 (H) x 432 (W) x 460 (D) (w/o Connector, Foot, Rack mount bracket)	
		Bitrate	128/192 kbps (MPEG-1, MPEG-2 BC 1ch) 128/192/256/384 kbps (MPEG-1, MPEG-2 BC 2ch) 128/192 kbps (MPEG-2 AAC-LC 1ch) 128/192/256/320/384 kbps (MPEG-2/4 AAC-LC 2ch) 320/384/480/512/640 kbps (MPEG-2/4 AAC-LC 4ch, 5.1ch, 6ch) 64/96/128 kbps (MPEG-4 HE-AAC 2ch) *4 128/192/256 kbps (MPEG-4 HE-AAC 5.1ch) *4 128/192/256 kbps (MPEG-4 AAC-ELD 2ch) *5 256/384/512/640 kbps (MPEG-4 AAC-ELD 4ch, 5.1ch) *5		Weight (typical)	6kg	
	Pass Through		Dolby E external encoder delay absorption function (0 to 2 frames)		Power Source	AC100V to 240V, 50/60Hz	
	Audio ch Control		ARIB STD-B39 *6		Power Consumption	70W max.	
			Operating Environment	0 to 45°C, 30 to 90% (condensation not allowed)			
			RoHS Compliant	This product is RoHS compliant			

### Option Table

	Suffix	Option Name	Description
Hardware	*1	HE9_OP_AnalogAudio	Conversion level : +4dBm to -18dBFS, Saturation level : +20dBm
	*2	HE9_OP_23P24P	1080P24, 1080P23.98
Software	*3	HE9_OP_60P	1080P60, 1080P59.94, 1080P50, 1080P30, 1080P29.97
	*4	HE9_OP_HEAAC	HE-AAC, MPEG-4 AAC
	*5	HE9_OP_AACELD	MPEG-4 AAC-ELD
	*6	HE9_OP_B39	ARIB STD B39
	*7	HE9_OP_B37	ARIB STD B37
	*8	HE9_OP_GIP	TS over IP output
	*9	HE9_OP_BISS	BISS
	*10	HE9_OP_ULDELAY	Ultra low Latency Mode (Minimum Latency 1 frame)
	*11	HE9_OP_SLDELAY	Super low Latency Mode (Minimum Latency 3 frames)
	*12	HE9_OP_4K	4K Cascade Connection

**Caution** Please use our products in accordance with the instructions provided in the manual, user's guide or specifications attached.

- Dolby is a trademark of Dolby Laboratories.
- Our company may change specifications and the appearance for improvement that are incidental to the product without providing prior notice. At the purchase and the use of the product, please confirm the latest information.
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