

HVE 9230

Embedded Audio Features up to 16 ch / 8 PES



HVE9230 is enhanced AVC/H.264 encoder which provides advanced features of 16 channels audio for 8 stereo, 5.1 ch. + stereo, or 8 PES transmission., Ancillary Data transmission or High Efficiency Video Mode in addition to the features available on HVE9200.

HVE9230 also provides One Frame Super Low Latency for high quality video transmission, Closed Captioning for IPTV or CATV AVC/H.264 transmissions.

Key features

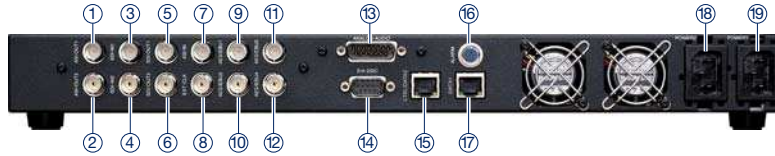
- Super Low Latency Mode (3 Frames, 1 Frame) (optional)
- Super Low Latency Mode with Audio Compression (optional)
- High Efficiency Mode (high picture quality at low bit rate) (optional)
- Multiple video format compatibility including 1080i, 1080/60p, 720p, 576i, 480i
- Embedded audio features up to 16 x ch/8 x PES
 - MPEG-1 LayerII: Stereo x 8
 - MPEG-2 AAC/MPEG-4 AAC/HE-AAC : (5.1+Stereo) x 2
 - Multiple audio format support up to 16 x ch/8 x PES combinations
- Closed Caption: EIA-608, EIA-708, ARIB STD-B37
- Ancillary Data Transmission Support: Time Code, SMPTE RDD11, SMPTE2038, ARIB STD-B40, OP-47
- Supports satellite Carrier ID
- 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)
- Quick Boot-up (15sec)
- Redundant Power Supply
- RoHS Compliant

Front Panel



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

Specifications

System		ISO/IEC13818-1(MPEG-2 SYSTEM TRANSPORT STREAM)		Ancillary Data	Data Type	TIMECODE, SMPTE334M, SMPTE2038 *1, ATSC-A72 *1, OP-47 *1, ARIB STD-B40, ARIB STD-B37 *1	
Supported Standards	Video	ISO/IEC14496-10(AVC/H.264)		Internal Test Signal	Video: Color Bar, Audio: 1kHz Sine wave		
	Audio	ISO/IEC11172-3(MPEG-1 AUDIO LayerII) ISO/IEC13818-7(MPEG-2 AAC) LC Profile ISO/IEC14496-3 subpart 4(MPEG-4 AAC) LC Profile *1 ISO/IEC14496-3 Amendment 1(MPEG-4 HE-AAC v1) *1 ISO/IEC14496-5:2001 Amendment 24:2009 (MPEG-4 AAC-ELD) *1 *2 Dolby Digital *1 SMPTE302M-2002		TS Specifications	Output Interface	DVB-ASI: BNC x 2 lines (0.8Vp-p 75Ω) IP *1 : 100Base-TX/1000Base-T (RJ-45) x 2 line (Category 5/5e/6) RTP/UDP/IP (RFC1889) , FEC (Pro-MPEG COP#3 R2 method)	
Video Specifications	Video Format	1080i (1920/1440x1080) @25Hz, 29.97Hz, 30Hz: SMPTE274M 1080p (1920/1440x1080) @24Hz, 23.98Hz: SMPTE274M *1 1080p (1920x1080) @60Hz, 59.94Hz: SMPTE424M *1 *2 *4:2:0 Only 720p (1280x720) @50Hz, 59.94Hz, 60Hz: SMPTE296M 480i (720x480) @29.97Hz: SMPTE125M 576i (720x576) @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)		
	Profile /Level	AVC/H.264	Profile: Main, High, High4:2:2(8bit) Level: 4.1/4.0/3.2/3.0 Entropy: CABAC/CAVLC	Stream Type	TS (188/204byte: No Reed-Solomon)		
	Video Input	SMPTE292M/SMPTE259M BNC x 2 lines(0.8Vp-p 75Ω)		Max. Multiplicity	Video 1, Audio max. 8, Ancillary Data max. 3, Total 12		
	Video Through Output	SMPTE292M/SMPTE259M BNC x 2 lines(0.8Vp-p 75Ω)		Maximum TS Rate	160.000Mbps (internal setting in 1 kbps units)		
	GOP Structure	AVC/H.264	M=1 to 3, N=1 to 30	Local Control	Fluorescent display (20 digits x 2) + operator switches (6 buttons)		
Audio Specifications	Audio Input	AES/EBU (8ch): BNC x 4 lines (1Vp-p 75Ω) Embedded Audio (SDI1 16ch) : SMPTE299M, SMPTE272M Embedded Audio (SDI2 16ch) : SMPTE299M, SMPTE272M Analog(4ch) : D-SUB 15Pin(20KΩ, balanced) *3		Remote Control	LAN 100Base-TX/1000Base-T (RJ-45)		
	Encoding Channels	AES max. 8ch, Embedded max. 16ch, Analog max. 4ch *3 (Selectable for each channel)		Maintenance I/O	LAN 100Base-TX/1000Base-T (RJ-45) (joint use with remote control)		
	Encoding Method	MPEG-1 L2 (1ch(Mono),2ch(DualMono),2ch(Stereo))max. 8PES MPEG-2 BC (1ch(Mono),2ch(DualMono),2ch(Stereo))max. 8PES 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. 4PES MPEG-4 AAC-LC(2ch(2/0), 5.1ch(3/2/1))max. 4PES *1 MPEG-4 HE-AACv1 (2ch(2/0), 5.1ch(3/2/1))max. 4PES *1 Dolby Digital (1ch(Mono), 2ch(Stereo))max. 4PES *1 SMPTE302M (2, 4, 6, 8 ch)max. 8PES		Alarm Output	Buzzer (volume adjustable), relay contact outputs (2 NO/NC contacts)		
	Sampling Frequency	48kHz		External Reset	System reset by relay contact input (1 NO contact)		
	Sampling Bit	16bit (MPEG-1, MPEG-2 BC, MPEG-2/4 AAC, MPEG-4 HE-AAC, Dolby Digital), 16/20bit (SMPTE302M)		Device Monitor Control	SNMP, WEB Based GUI		
	Bitrate	128/192kbps (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 2 ch) 320/384/480/512/640 kbps (MPEG-2/4 AAC-LC 4ch, 5.1ch, 6ch) 64/96/128 kbps (MPEG-4 HE-AAC 2ch) *1 128/192/256 kbps (MPEG-4 HE-AAC 5.1ch) *1 64/80/96/112/128/160/192/224/256/320/384/448/640 kbps (Dolby Digital 1ch) *1 96/112/128/160/192/224/256/320/384/448/640 kbps (Dolby Digital 2ch) *1		Other	TS encoding	BISS-1/E *1	
	Pass Through	Dolby E external encoder delay absorption function (0 to 2 frames)		Dimensions	44mm (H) x 432mm (W) x 460mm (D) (excluding protrusions)		
				Weight (typical)	6kg or less		
				Power Source	100 to 240 VAC (50/60 Hz)		
				Power Consumption	60W or less		
			Operating Environment	0 to 45°C, 30 to 90% (condensation not allowed)			

*1 "MPEG-4 AAC-LC", "MPEG-4 HE-AAC", "Dolby Digital", "Dolby Digital 4PES", "1080P@24Hz, 23.98Hz, 60Hz, 59.94Hz", "TS over IP", "BISS", and "Ancillary Data" functions are optional.

*2 "MPEG-4 AAC-ELD" and "1080p@60Hz, 59.94Hz" are planned to be supported in the future.

*3 The Analog Audio Input is optional.

Conversion level: +4dBm to -18dBFS, Saturation level: +20dBm

Caution

- In order to ensure correct and safe use, be sure to read the User's manual before use.
- Do not install in locations exposed to water, humidity, steam, dust, or mist. Doing so could cause fire, electric shock, or equipment failure.

- Features and specifications are subject to change without prior notice.
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