

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

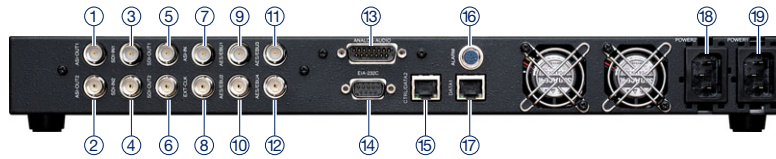
- Super Low Latency Mode (3 Frames, 1 Frame) (optional)
- Super Low Latency Mode with Audio Compression (optional)
- High Efficiency Mode (high picture quality at low bit rate) (optional)
- Multiple video format compatibility including 1080i, 1080p, 720p, 576i, 480i, 1080p50 (optional), 1080p59.94 (optional), 1080p60 (optional)
- 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 (23sec)
- 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

Supported Standards	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	
	Video	ISO/IEC14496-10 (AVC/H.264)		Internal Test Signal	Video: Color Bar, Audio: 1kHz Sine wave		
Video Specifications	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 Format	1080I (1920/1440x1080)@25Hz, 29.97Hz, 30Hz: SMPTE274M 1080P (1920/1440x1080)@23.98Hz, 24Hz: SMPTE274M *1 1080P (1920x1080)@50Hz, 59.94Hz, 60Hz: SMPTE274M *1 *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 : 4.2/4.1/4.0/3.2/3.0 Entropy: CABAC/CAVLC	Stream Type	TS (188/204byte: No Reed-Solomon)	
	Video Input	SMPTE424M/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	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Maximum TS Rate	160.000Mbps (internal setting in 1 kbps units)		
	Video Input	AVC/H.264	M=1 to 3, N=1 to 30	Control Specifications	Local Control	Fluorescent display (20 digits x 2) + operator switches (6 buttons)	
	Video Input	MPEG-2	—		Remote Control	LAN 100Base-TX/1000Base-T (RJ-45)	
	Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Maintenance I/O	LAN 100Base-TX/1000Base-T (RJ-45) (joint use with remote control)		
	Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Alarm Output	Buzzer (volume adjustable), relay contact outputs (2 NO/NC contacts)		
	Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		External Reset	System reset by relay contact input (1 NO contact)		
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Device Monitor Control	SNMP, WEB Based GUI			
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Other	TS encoding	BISS 1/E *1		
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Dimensions	44mm (H) x 432mm (W) x 460mm (D) (excluding protrusions)			
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Weight (typical)	6kg or less			
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Power Source	100 to 240 VAC (50/60 Hz)			
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Power Consumption	60W or less			
Video Input	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		Operating Environment	0 to 45°C, 30 to 90% (condensation not allowed)			
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		Other	*1 "MPEG-4 AAC-LC", "MPEG-4 HE-AAC", "Dolby Digital", "Dolby Digital 4PES", "1080P@23.98Hz, 24Hz, 50Hz, 59.94Hz, 60Hz", "TS over IP", "BISS", and "Ancillary Data" functions are optional.		
	Encoding Channels	AES max. 8ch, Embedded max. 16ch, Analog max. 4ch *3 (Selectable for each channel)			*2 Planned to be supported in the future.		
	Encoding Method	MPEG-1 L2 (1ch (Mono), 2ch (Dual Mono), 2ch (Stereo)) max. 8PES MPEG-2 BC (1ch (Mono), 2ch (Dual Mono), 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			*3 The Analog Audio Input is optional. Conversion level: +4dBm to -18dBFS, Saturation level: +20dBm		
	Sampling Frequency	48kHz					
	Sampling Bit	16bit (MPEG-1, MPEG-2 BC, MPEG-2/4 AAC, MPEG-4 HE-AAC, Dolby Digital), 16/20bit (SMPTE302M)					
	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					
Pass Through	Dolby E external encoder delay absorption function (0 to 2 frames)						



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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- Dolby is a trademark of Dolby Laboratories.



NTT Electronics Corporation

Overseas System Business Department

New Stage YOKOHAMA, 1-1-32 Shin-urashimacho,
Kanagawa-ku, Yokohama-shi, Kanagawa 221-0031, Japan

TEL: +81-45-414-9180

FAX: +81-45-453-9710

E-mail: sys-info-w@ntt-el.com

URL: <http://www.ntt-electronics.com/en>