

HVD 9130

High Performance and Reliable 10bit 4:2:2 AVC/H.264 & MPEG-2 Decoder



HVD9130 performs low latency and compressed video transmission with NTT Electronics' High End Encoder family.

In addition, it supports 4k transmission with multiple units (4 units) and can decode completely synchronized 4k contents without an external synchronizer.

HVD9130 is also available with DVB-S2 Demodulation option.

Key features

- Professional-of-the-Art-Demodulator for Broadcast and Telecom Applications (optional *10 *11 *12)
 - DVB-S, DVB-S2 demodulator up to 32APSK
 - DVB-DSNG: 16QAM, 8PSK (TC8PSK)
 - VCM and ASI Multistream mode for countermeasures for rain fade
 - Low Roll off support (5%, 10%, 15%, 20%)
- Supports 10bit 4:2:2 H.264/AVC and MPEG-2 Decoding
- Low Latency Mode (Minimum Latency 1 Frame) with HVE9110, HVE9200, HVE9210, HVE9230, XVE9310 combination (with HVE9100: 3 Frames) *H.264/AVC only *Encoder optional
- Compressed Audio for Super Low Latency (optional *9)
- Multiple video format compatibility including 1080i, 1080p, 720p, 576i, 480i 1080p50 (optional *4), 1080p59.94 (optional *4), 1080p60 (optional *4)
- Phase Aligned Audio
- Embedded audio features up to 16ch/8PES (optional *1)
 - Multiple audio format support up to 16ch/8PES combinations (optional *1)
 - MPEG-1 LayerII: Stereo x 8
 - MPEG-2 AAC/MPEG-4 AAC/HE-AAC (5.1 + Stereo) x 2
- Analog Audio output (optional *15)
- Closed Caption: CEA-608, CEA-708
- Cascade Connection with Multiple Units for 3D and 4K decoding
- Auto signal Synchronization for 3D and 4K decoding (optional *8)
- Ancillary Data Transmission Support : Time Code, SMPTE RDD11, SMPTE2038, ARIB TR-B22, TR-B23
- Redundant IP input x 2
- Seamless Protection Switching for IP input (optional *16)
- Redundant power supply

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

Front Panel

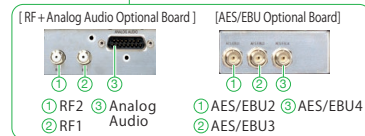


- ① Power switch 1
- ② Power switch 2
- ③ Status LEDs
- ④ Display panel
- ⑤ Operation buttons

Rear Panel



- ① SYNC-IN
- ② SDI-SYNC
- ③ SDI-OUT1
- ④ SDI-OUT2
- ⑤ ASI-IN
- ⑥ ASI-OUT
- ⑦ AES/EBU1
- ⑧ DATA1
- ⑨ CTRL / DATA2
- ⑩ ALARM
- ⑪ EIA-232C
- ⑫ AC inlet 2
- ⑬ AC inlet 1



Specifications

RF Demodulator	Demodulation /Symbol Rate (Mbaud)	DVB-S2 (EN310 210)	QPSK, 8PSK : (32A,16A, 8PSK) *11 *12 / 16APSK : (32A, 16A) 0.256~45Mbaud *11 *12 (Data rates <1Mbaud require pilots) 32APSK : (32A) 1~30Mbaud (Normal Frames only)*12	
		DVB-S (EN300 421)	QPSK, 8PSK, 16QAM : 1~45 Mbaud *10 *11 *12	
		DVB-DSNG (EN301 210)	QPSK, 8PSK, 16QAM : 1~45 Mbaud *10 *11 *12 *13 *14	
		DVB-S2	QPSK, 8PSK (16A, 8PSK) 3~45 Mbaud *13 *14 16APSK : (16A) 3~45 Mbaud *14	
	Coding and Modulation		Auto CCM, CCM, VCM (ASI multi stream capable)	
	Frame Length		Normal Frame : 64kbits *10 *11 *12 *13 *14 Short Frame : 16kbits *10 *11 *12	
	FEC	DVB-S2	QPSK : 1/3, 1/4, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 *10 *11 *12 *13 *14 8PSK : 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 *10 *11 *12 *13 *14 16APSK : 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 *11 *12 *14 32APSK : 3/4, 4/5, 5/6, 8/9, 9/10 *12	
		DVB-S (EN300 421)	QPSK : 1/2, 2/3, 3/4, 5/6, 7/8 *10 *11 *12 *13 *14 8PSK : 2/3, 5/6, 8/9 *10 *11 *12 *13 *14 16QAM : 3/4, 7/8 *10 *11 *12 *13 *14	
		DVB-S (EN301 210)	QPSK : 1/2, 2/3, 3/4, 5/6, 7/8 *10 *11 *12 *13 *14 8PSK : 2/3, 5/6, 8/9 *10 *11 *12 *13 *14 16QAM : 3/4, 7/8 *10 *11 *12 *13 *14	
	Pilot tones		Pilot tones detection for low data rates and LNB' switch a bad phase noise (in 8PSK or higher)	
Input Frequency Range		IF 950~2150MHz (L band)		
Roll-off Factor	DVB-S2	0.05, 0.10, 0.15, 0.20, 0.25, 0.35		
	DVB-S	0.25, 0.35		
Signal Level		-65 to -45dBm@1Mbaud, -60 to -35dBm@10Mbaud, -53 to -28dBm@45Mbaud MAX input: Total input power -25dBm		
RF input connector		Dual 75 ohm F (Female), input selectable		
LNB Power and Control	DC output	Off /13V (Vertical) /18V (Horizontal)		
	Max Current	300mA		
	Band Switching	OFF/22kHz		
Supported Standards	System	ISO/IEC13818-1 (MPEG-2 SYSTEM TRANSPORT STREAM)		
	Video	ITU-T H.264 ISO/IEC 14496-10 AVC ITU-T H.262 ISO/IEC 13818-2 MPEG-2 Video		
	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 *3 ISO/IEC14496-3 Amendment 1 (MPEG-4 HE-AAC v1) *3 ISO/IEC14496-5:2001 Amendment 24:2009 (MPEG-4 AAC-ELD) *9 SMPTE302M-2002		
Video Specifications	Video Format	1080i (1920/1440/1280/960x1080) @25Hz, 29.97Hz, 30Hz: SMPTE274M 1080P (1920/1440/1280/960x1080) @23.98Hz, 24Hz: SMPTE274M 1080P (1920/1440/1280/960x1080) @29.97Hz, 30Hz: SMPTE274M 1080P (1920/1440/1280/960x1080) @50Hz, 59.94Hz, 60Hz: SMPTE274M *4 *H.264 Only		
		720P (1280x720) @50Hz, 59.94Hz, 60Hz: SMPTE296M 480i (720/352x480) @29.97Hz: SMPTE125M 576i (720/352x576) @25Hz: ITU-R BT.656-4		
		Profile / Level	Profile: Main, High, High4:2:2 (10bit) Level: 4.2 / 4.1 / 4.0 / 3.2 / 3.1 / 3.0 Entropy: CABAC/CAVLC	
		MPEG-2	MP@HL, 422P@HL, MP@ML, 422P@ML	
Audio Specifications	Video Output	SMPTE424M/SMPTE292M/SMPTE259M BNC x 2 lines (0.8Vp-p 75Ω)		
	Audio Output	AES/EBU (2ch + 6ch *2) : BNC x 1 + 3 *2 lines (1Vp-p 75Ω) Embedded Audio: SMPTE424M, SMPTE299M, SMPTE272M ANALOG (4ch) : D-SUB 15Pin (50Ω, balanced) *15		
	Decoding Channels	AES max. 8ch; Embedded max. 16ch *1		
Decoding Method	MPEG-1 L2 (1ch (Mono), 2ch (DualMono), 2ch (Stereo)) max. 4PES (8PES *1) MPEG-2 BC (1ch (Mono), 2ch (DualMono), 2ch (Stereo)) max. 4PES (8PES *1) MPEG-2 AAC-LC (1ch (1/0), 2ch (1+1), 2ch (2/0), 4ch (3/1), 4ch (2/2), 4ch (4/0), 5.1ch (3/2/1), 6ch (6/0), 6ch (6x1)) max. 2PES (4PES *1) MPEG-4 AAC-LC (2ch (2/0), 5.1ch (3/2/1)) max. 2PES (4PES *1) MPEG-4 HE-AACv1 (2ch (2/0), 5.1ch (3/2/1)) max. 2PES (4PES *1) SMPTE302M (2, 4, 6, 8 ch) max. 4PES (8PES *1) MPEG-4 AAC-ELD (2ch (2/0), 4ch (3/1), 5.1ch (3/2/1)) max. 4PES *9			
		Decoding Method		
Decoder Specifications	Audio Specifications	Sampling Frequency	48kHz	
		Sampling Bit	16bit (MPEG-1, MPEG-2 BC, MPEG-2/4 AAC, MPEG-4 HE-AAC), 16/20bit (SMPTE302M)	
		Bitrate	128/192kbps (MPEG-1, MPEG-2 BC 1ch) 128/192/256/384 kbps (MPEG-1, MPEG-2 BC 2ch) 128/192/256/320/384 kbps (MPEG-2/4 AAC-LC 1ch, 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) *3 128/192/256 kbps (MPEG-4 HE-AAC 5.1ch) *3	
		Pass Through	Dolby E external decoder delay absorption function (0 to 1 frame)	
	Ancillary Data	Data Type	TIMECODE, SMPTE334M, SMPTE2038, ATSC A/53, ATSC A/72, OP-47, ARIB TR-B22, TR-B23	
		Input Interface	DVB-ASI: BNC x 1 lines (0.8Vp-p 75Ω) IP *7 : 100Base-TX/1000Base-T (RJ-45) x 2 line (Category 5/5e/6) RTP/JUDP/IP (SMPTE2022-2-2007/RFC2250, RFC3550), FEC (SMPTE2022-1-2007/Pro-MPEG COP#3 R2 method)	
	TS Specifications	Stream Type	TS (188/204byte: No Reed-Solomon)	
		Max. Multiplicity	Video: 1, Audio max.4 + Ancillary Data max.3 (Audio + Ancillary Total max.5) Video: 1, Audio max.8 + Ancillary Data max.3 (Audio + Ancillary Total max.11) *8	
		Maximum TS Rate	160.000Mbps	
	Control Specifications	Local Control	FL display (20 digits x 2) + operator switches (6 buttons)	
Remote Control		LAN 100Base-TX/1000Base-T (RJ-45)		
Maintenance I/O		LAN 100Base-TX/1000Base-T (RJ-45) (joint use with remote control)		
Alarm Output		Buzzer (volume adjustable), relay contact outputs (2 NO/NC contacts)		
External Reset		System reset by relay contact input (1 NO contact)		
Other	Device Monitor Control	SNMPv1, WEB Based GUI		
	TS Descramble	BISS-1/E *6		
	Dimensions (mm)	44 (H) x 432 (W) x 460 (D) (w/o Connector, Foot, Rack mount bracket)		
	Weight (typical)	6kg (w/o option card)		
	Power Source	AC100V to 240V, 50/60Hz		
	Power Consumption	50W max.		
	Operating Environment	0 to 45°C, 30 to 90% (condensation not allowed)		
RoHS Compliant	This product is RoHS compliant			
Option Table				
Hardware	Suffix	Option Name	Description	
	*1	HD9_OP_AudioModule	Additional audio module for 8PES Audio	
	*2	HD9_OP_AESEBU	AES/EBU 6ch	
	*15	HD9_OP_ANALOG	Analog Audio 4ch	
	*10	HD_OP_RFSS-8	SS type RF Module/QPSK, 8PSK	
	*11	HD_OP_RFSS-16	SS type RF Module/QPSK, 8PSK, 16APSK	
	*12	HD_OP_RFSS-32	SS type RF Module/QPSK, 8PSK, 16APSK, 32APSK	
	*13	HD_OP_RFST-8	ST type RF Module/QPSK, 8PSK	
	*14	HD_OP_RFST-16	ST type RF Module/QPSK, 8PSK, 16APSK	
	Software	*3	HD9_OP_HEAAC	HE-AAC, MPEG-4 AAC
*4		HD9_OP_60P	1080P60, 1080P59.94, 1080P50, 1080P30, 1080P29.97	
*6		HD9_OP_BISS	BISS	
*7		HD9_OP_GIP	TS over IP(1000BASE-T)	
*8		HD9_OP_4k	4K Cascade Connection	
*9		HD9_OP_AAELD	Compressed Audio for Super Low Latency	
*16		HD9_OP_SEAMLESS	Seamless Protection	
Please ask our sales about hardware options *2 and *10 to *15				
<p>Caution Please use our products in accordance with the instructions provided in the manual, user's guide or specifications attached.</p> <p>□ Dolby is a trademark of Dolby Laboratories.</p> <p>□ 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.</p> <p>□ Exporting our products or technologies may be subject to the Foreign Exchange and Foreign Trade Law of Japan and export control acts and regulations of other related countries.</p>				



NTT Electronics Corporation

Overseas Department, System Business Division Sales and Marketing Group
 New Stage YOKOHAMA, 1-1-32 Shin-urashimacho, Kanagawa-ku,
 Yokohama-shi, Kanagawa, 221-0031, Japan
 TEL: +81-50-9000-6004 FAX: +81-45-453-9710 E-mail: sys-info-w@ntt-el.com
 URL: <https://www.ntt-electronics.com/en/products/video/>