

4K/HD/SD Encoder

HC10000E / HC11000E

Superior quality and performance, 4K/60p 4:2:2 HEVC Encoder



Key Features

- Superior image quality, performance and reliability built in NTT Electronics' H.265/HEVC Encoder LSI (Encoder)
- H.265/HEVC, H.264/MPEG-4 AVC supported
- 4K Encoding
- Super Low Delay supported (100ms@2160p60, 40ms@1080i25, 33ms@1080i29.97)
- Embedded Audio up to 16ch/8 PES combinations
- Dolby Digital Pass-through
- Ancillary Data transmission
- BISS-1/E and BISS-2/CA supported
- HDR supported (for Contribution)
- 12G-SDI Input
- 3G-SDI, 12G-SDI Throughout (HC11000E)
- AES/EBU Audio Input (HC11000E)
- Simultaneous multiple IP Out and DVB-ASI Out
- Multicast / Unicast to support IPv4 and IPv6 with Error Correction
- Seamless Protection Switching supported
- Two each Ethernet ports for GUI control and for streaming data
- Dual power supply for redundancy (HC11000E)

Front Panel



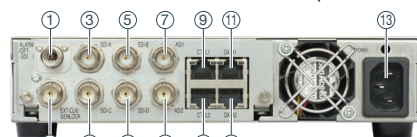
HC10000E
(1RU Half)



HC11000E
(1RU Full)

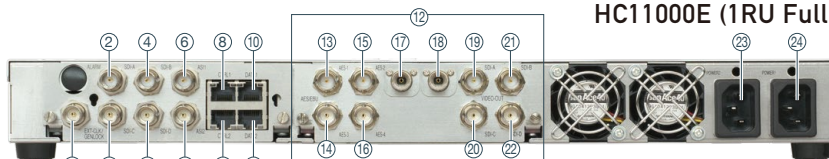
Rear Panel

HC10000E (1RU Half)



- ① 12G-SDI-IN^{OP7} ④ SDI-C ⑦ ASI1 ⑩ CTRL2
- ② EXT-CLK^{OP9} ⑤ SDI-B ⑧ ASI2 ⑪ DATA1
- ③ SDI-A ⑥ SDI-D ⑨ CTRL1 ⑫ DATA2
- ⑬ AC inlet

HC11000E (1RU Full)



- ① EXT-CLK^{OP9} ⑤ SDI-D ⑨ CTRL2
 - ② SDI-A ⑥ ASI1 ⑩ DATA1
 - ③ SDI-C ⑦ ASI2 ⑪ DATA2
 - ④ SDI-B ⑧ CTRL1 ⑫ Option Slot
- Option Board

⑬⑭⑮⑯⑰⑱⑲⑳㉑㉒ : Digital Audio Input Board^{OP1}

⑬⑭⑮⑯⑰⑱⑲⑳㉑㉒ : 12G-SDI/AES Input Board^{OP8}

⑬ AES/EBU1 ⑯ AES/EBU4 ⑲ SDI-A ㉒ AC inlet2

⑭ AES/EBU3 ⑰ 12G-SDI-IN ㉑ SDI-C ㉒ AC inlet1

⑮ AES/EBU2 ⑱ 12G-SDI-THRU ㉑ SDI-B

Specifications

Video	Input Interface	BNC: 12G-SDI (SMPTE ST 2082-1) /3G-SDI (SMPTE ST 424)/HD-SDI (SMPTE ST 292)/SD-SDI (SMPTE ST 259)
	Output Interface ^{OP1}	BNC: 3G-SDI (SMPTE ST 424)/HD-SDI (SMPTE ST 292)/SD-SDI (SMPTE ST 259)
	Encode Method	H.265/HEVC, H.264/MPEG-4 AVC
	Profile; Level (Please see below for supported formats.)	H.265/HEVC Profile: Main 4:2:2 10, Main 10, Main ; Level: 5.1, 4.1, 4 H.264/MPEG-4 AVC ^{OP3} Profile: High4:2:2, High10, High, Main ; Level: 4.2, 4.1, 4.0, 3.2, 3.0
Video Format @ Frame Rate	H.265/HEVC	2160P (3840x2160) @23.98Hz ^{OP2} , 29.97Hz ^{OP2} , 50Hz ^{OP2} , 59.94Hz ^{OP2} 1080P (1920/1440x1080) @23.98Hz, 29.97Hz, 50Hz, 59.94Hz ; 1080I (1920/1440x1080)@25Hz, 29.97Hz 720P (1280x720) @50Hz, 59.94Hz 576I (720x576) @25Hz ; 480I (720x480) @29.97Hz
	H.264/MPEG-4 AVC ^{OP3}	1080P (1920/1440x1080) @23.98Hz, 29.97Hz, 50Hz, 59.94Hz 1080I (1920/1440x1080) @25Hz, 29.97Hz 720P (1280x720) @50Hz, 59.94Hz 576I (720x576) @25Hz ; 480I (720x480) @29.97Hz
Audio	Input Interface	Embedded Audio 16ch (SMPTE ST 299, SMPTE ST 272), AES/EBU 8ch ^{OP1}
	Encode Audio Type	MPEG-1 L2 : 1ch (Mono), 2ch (Dual Mono), 2ch (Stereo); max. 8PES MPEG-2 AAC-LC : 1ch (1/0), 2ch (1+1), 2ch (2/0), 4ch (3/1), 5.1ch (3/2/1), 6ch (2/2/2); max. 4PES MPEG-4 AAC-LC : 2ch (2/0), 4ch (3/1), 5.1ch (3/2/1); max. 4PES MPEG-4 HE-AACv1 : 2ch (2/0), 5.1ch (3/2/1); max. 2PES MPEG-4 AAC-ELD : 2ch (2/0), 4ch (3/1), 5.1ch (3/2/1); max. 2PES SMPTE ST 302 : 2, 4, 6, 8ch ; max. 4PES Dolby Digital Pass Through; max. 6PES
Ancillary	Data Type	TIMECODE, ARIB TR-B22/TR-B23, SMPTE ST 2038, ARIB STD-B39 ^{OP6 OP11}
Transport Stream (TS)	Output Interface	DVB-ASI : BNC x 2 (0.8Vp-p 75Ω) ; IP : 100BASE-TX/1000BASE-T x 2 (RJ-45)
	Output Type	MPEG-2 TS (188/204byte) ; For IP: Time-stamped TS (TTS) (192byte), Advanced TS (192byte)
	Maximum TS Rate	200.000Mbps
	TS Encryption	BISS-2 1/E/CA ^{OP12 OP13} , BISS-1/E ^{OP5 OP13}
Test Signal		Video: Color-bar signal, Audio : 1kHz sine wave (-18/-20 dBFS)
Network	Interface	DATA1: 100BASE-TX/1000BASE-T (RJ-45) ; DATA2: 100BASE-TX/1000BASE-T (RJ-45)
	Transmission	RTP/UDP/IP (SMPTE ST 2022-2:2007, RFC2250, RFC3550, RFC1889), Unicast/Multicast
	Network Features	IPv4: IGMPv2/v3, NTP, DHCP, Ping, Syslog, PPPoE IPv6: MLDv2, Ping, Syslog, IPoE
	Error Correction	FEC (SMPTE ST 2022-1:2007/Pro-MPEG COP#3 R2), ARQ
Control	Local Control	LCD (20digitsx4/brightness control available) + Front Switch (7 buttons)
	Remote Control	WEB GUI, SNMP v1, Ping, Syslog
Others	Dimensions	HC10000E: W:209 x H:44 x D:430 (mm) (w/o Connector, Foot, Rack mount bracket) HC11000E: W:432 x H:44 x D:430 (mm) (w/o Connector, Foot, Rack mount bracket)
	Weight	HC10000E: 5kg typ. ; HC11000E: 8kg typ. (w/o option card)
	Supply Voltage	AC100V to 240V, 50/60Hz HC10000E : Single power supply ; HC11000E : Dual power supply for redundancy
	Power Consumption	HC10000E : 100W max., HC11000E : 150W max.
	Operating Environment	0 to 45°C, 30 to 90% (non condensing)
	Compliance	RoHS, VCCI, FCC, ICES, CE, UL, CSA

	Suffix	Option Name	Description
Hardware	OP1	HC11000_OP_AES	Digital Audio Input Board (Factory Option)
	OP7	HC10000E_OP_12G	12G-SDI Input (Factory Option)
	OP8	HC11000E_OP_AES-12G	12G-SDI/AES Input Board (Factory Option)
	OP9	HC1x000E_OP_EXTCLK	External TS Clock Input (Factory Option)

- Dolby is a trademark of Dolby Laboratories. All other brand or product names are trademarks or registered trademarks of their respective companies or organizations.
- 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.
- 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.

	Suffix	Option Name	Description
Software	OP2	HC1x000E_OP_4K	4K Encoding
	OP3	HC1x000E_OP_AVC10	H.264/MPEG-4 AVC 10bit Encoding
	OP4	HC1x000E_OP_ULDELAY	Super Low Delay Mode
	OP5	HC1x000E_OP_BISS	BISS Encryption
	OP6	HC1x000E_OP_B39	ARIB STD B39 (Audio mode automatic switching)
	OP10	HC1x000E_OP_B39-4KVIDEO	ARIB STD B39 (4K video dynamic range and colorimetry automatic switching)
	OP12	HC1x000E_OP_BISS2UG	BISS-2 Upgrade for the kit installed BISS-1
	OP13	HC1x000E_OP_BISS1+2	BISS-1 and BISS-2 Encryption
OP14	HC1x000E_OP_SBRC	Seamless Bitrate Change	

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



NTT Electronics Corporation

Business Promotion Office, Digital Video Component Business Group
New Stage YOKOHAMA, 1-1-32 Shin-urashimacho, Kanagawa-ku,
Yokohama-shi, Kanagawa, 221-0031, Japan
TEL: +81-50-9000-6004 FAX: +81-45-453-9651 E-mail: sys-info-w@ntt-el.com
URL: <https://www.ntt-electronics.com/en/products/video/>