

Tiny 265 4K™ IP: E+D TELCO

Compact FPGA based Ultra High Definition 3840 x 2160p, 1920 x 1080p, 720p, at 59.94 and 29.97 H.265/HEVC transport stream encoder/decoder pair, supporting Main 4:2:2 10 profile. Configured as 1 RU half-wide stand alone appliances. Input via 4 each 3G HD-SDI ports (BNC). Audio support for MPEG-2 AAC and MPEG-4 AAC with 16 bit/20 bit/24 bit up to 284 kbps. Bit rates are UHD 4-100 Mbps, HD 2-60 Mbps. Outputs are UDP over IP. Supports FEC and ARQ.

Encoder – Features (E)

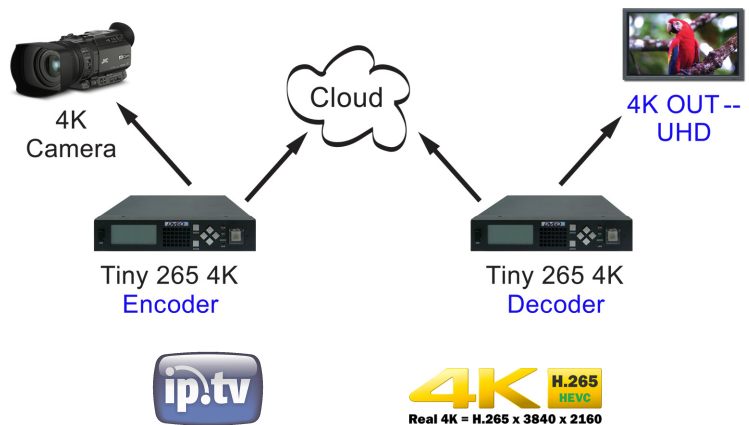
- Up to 59.94 fps 4k Ultra HD 3840 x 2160p H.265/HEVC encoder
- Inputs:
 - One 12G HD-SDI input, or
 - Four 3G SDI inputs (SMPTE 424M), or
 - One HD-SDI or SD-SDI input
- Simultaneous Outputs:
 - IP – H.265/HEVC Main/High/Main 4:2:2, UDP/RTP
 - DVB-ASI
- 4:2:2 10-bit encoding at 50/59.94 fps
- Audio Encoding:
 - AAC-LC: Maximum 8 channels
- Encoding bit rates:
 - UHD: 4-160 Mbps
 - HD – 1080p: 2-60 Mbps
 - HD – 1080i, 720p: 1-30 Mbps
 - SD: 512 Kbps to 10 Mbps

Decoder – Features (D)

- 4K 4:2:2 & 4:2:0 hybrid contribution decoder
- Simultaneous Inputs:
 - IP – H.265/HEVC Main/High/Main 4:2:2, UDP/RTP
 - DVB-ASI
- Outputs:
 - One 12G HD-SDI output, or
 - Four 3G SDI outputs (SMPTE 424M), or
 - One HD-SDI or SD-SDI output
- Audio Decoding:
 - AAC-LC: Maximum 8 channels
- Decoding bit rates:
 - UHD: 4-100 Mbps
 - HD – 1080p: 2-60 Mbps
 - HD – 1080i, 720p: 1-30 Mbps
 - SD: 512 Kbps to 10 Mbps

Both Systems – Features

- Support 4K (3840 x 2160p) 1080p, 1080i, 720p, 576i, 480i
- Control and monitoring via web browser, front panel, or SNMP
- ARQ packet recovery technology and FEC (Forward Error Correction)



Overview

Ultra High Definition 4K is the new mezzanine standard for capturing expensively staged events such as major league sports, concerts, and events involving governments and of course pageantry. The expense is well justified since the archival value is great and remains so over time.

Contribution encoders typically encode to mezzanine 4:2:2 with high level profiles. Our new 4K encoder encodes HD-SDI at mezzanine 4:2:2 and 4:2:0.

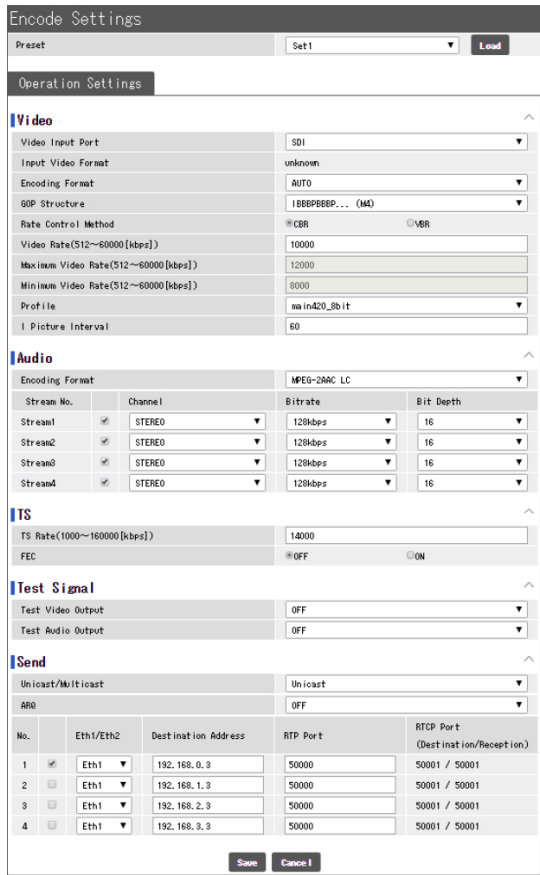
DVEO®'s brand new Tiny 265 4K IP encoder and matching decoder are useful for both live streaming via 4:2:0 and also for media distribution via UHD 4:2:2. The mezzanine output supports both ASI and IP output.

The world needs a small compact 4K HEVC encoder to use in small spaces. This is a product that fills that void.

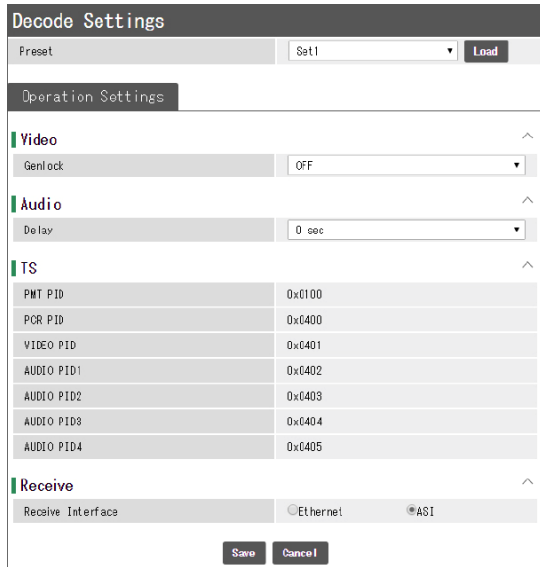
Applications

- 4K news, satellite, and sports contribution
- End to end delivery of 4K content
- Can be combined with Proxicaster™ to deliver HLS or DASH to end points

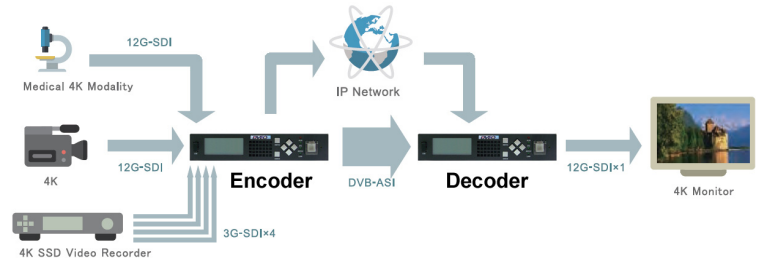
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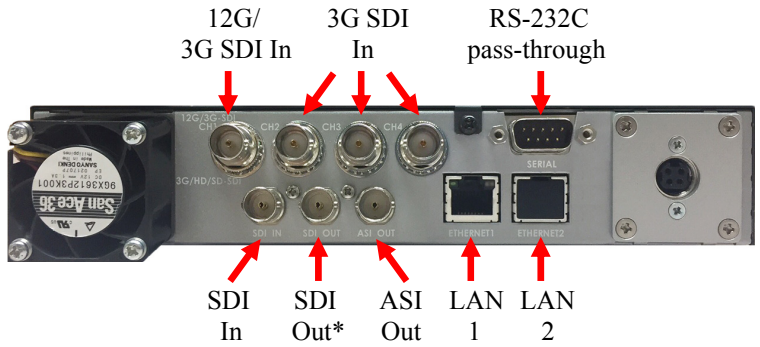
Encoding Settings



Decoding Settings

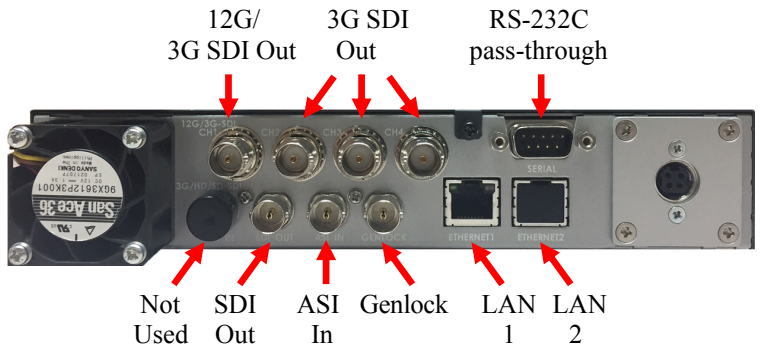


Rear Connectors – Encoder



*Pass-through

Rear Connectors – Decoder



Specifications

	ENCODER	DECODER
Video		
Video:	12G-SDI (SMPTE ST 2082 compliant) 3G-SDI Level A/B (SMPTE 424M) HD-SDI (SMPTE 292M compliant 1080/59.94i) SD-SDI (SMPTE 259M compliant 480/59.94i)	12G-SDI (SMPTE ST 2082 compliant) 3G-SDI Level A/B (SMPTE 424M) HD-SDI (SMPTE 292M compliant 1080/59.94i) SD-SDI (SMPTE 259M compliant 480/59.94i)
Resolutions:	3840x2160p 2SI (50/59.94) 3840x2160p SQ (50/59.94) 1920x1080p (50/59.94) 1920x1080i (25/29.97) 1280x720p (25/29.97/50/59.94) 720x480i (25/29.97) 3840x2160p 2SI (50) 3840x2160p SQ (50) 1920x1080p (50) 1920x1080i (25) 1280x720p (25/50) 720x576i (25)	3840x2160p 2SI (50/59.94) 3840x2160p SQ (50/59.94) 1920x1080p (50/59.94) 1920x1080i (25/29.97) 1280x720p (25/29.97/50/59.94) 720x480i (25/29.97) 3840x2160p 2SI (50) 3840x2160p SQ (50) 1920x1080p (50) 1920x1080i (25) 1280x720p (25/50) 720x576i (25)
Encoding/Decoding:	ISO/IEC23008-2 (H.265/HEVC) compliant	ISO/IEC23008-2 (H.265/HEVC) compliant
Profile:	Main, Main 10, Main 4:2:2 10	Main, Main 10, Main 4:2:2 10
Bit Rates:	UHD: 4 ~ 160 Mbps HD: 2 ~ 60 Mbps (59.94p) 1 ~ 30 Mbps (59.94i) SD: 512 Kbps ~ 10 Mbps	UHD: 4 ~ 100 Mbps HD: 2 ~ 60 Mbps (59.94p) 1 ~ 30 Mbps (59.94i) SD: 512 Kbps ~ 10 Mbps
Rate Control:	CBR/VBR	CBR/VBR
Genlock	N/A	Black Burst (same phase), Tri-level sync signal
Video Monitor Output:	Output 4K to 2K as down-conversion through output of 2K or less	N/A
Connectors:	BNC-J 75Ω 3G/HD/SD	BNC-J 75Ω 3G/HD/SD
Latency – encoder to decoder (Glass to Glass):	12G SDI In and 12G SDI Out: 810 milliseconds (4K at 20 mbps, H.265 over LAN) The integrated chipsets are capable of producing latency as low as 600 milliseconds.	



	ENCODER	DECODER
Audio		
Video:	SDI Embedded (PCM)	SDI Embedded (PCM)
Encoding/Decoding:	MPEG2-AAC (ISO/IEC13818-7 compliant) MPEG4-AAC (ISO/IEC 14496-3 compliant)	MPEG2-AAC (ISO/IEC13818-7 compliant) MPEG4-AAC (ISO/IEC 14496-3 compliant)
Sampling Frequency:	48 kHz / Max. 8 channel, Audio Off/ 16 bit/20 bit/24 bit	48kHz / Max. 8channel, Audio Off/16 bit/20 bit/24 bit
Compression Rates:	64/96/128/192/256/384 Kbps	Follows encoder
Channels:	2 channels x 4 (Maximum 8)	2 channels x 4 (Maximum 8)
Coding Channels:	Mono, Mono x2, Stereo	Mono, Mono x2, Stereo

DVB-ASI Input/Output		
Stream Type:	MPEG-2 TS (188 bytes)	MPEG-2 TS (188 bytes)
Output/Input:	One DVB-ASI output	One DVB-ASI input
Connectors:	BNC (75Ω)	BNC (75Ω)
Bit Rates:	512 Kbps ~ 160 Mbps	512 Kbps ~ 110 Mbps

Ordering Information

Tiny 265 4K IP: E TELCO – Encoder
 Tiny 265 4K IP: D TELCO – Decoder

Specifications

	ENCODER	DECODER
IP TS		
Stream Protocols:	MPEG-2 Transport Stream over RTP/RTCP (UDP/IP)	MPEG-2 Transport Stream over RTP/RTCP (UDP/IP)
Type:	Multicast, Unicast	Multicast, Unicast
Output/Input:	Two RJ45 Ports	One RJ45 Port
Bit Rates:	512 Kbps ~ 160 Mbps	512 Kbps ~ 110 Mbps
Packet Loss Recovery:	FEC (Pro-MPEG COP#3 R2), ARQ	FEC (Pro-MPEG COP#3 R2), ARQ
IP Network Interfaces		
IP Address:	IPv4 (Static), IPv4 (DHCP), IPv6	IPv4 (Static), IPv4 (DHCP), IPv6
Ethernet Type:	10/100/1000 Base-T (Supports Auto-MDIX)	10/100/1000 Base-T (Supports Auto-MDIX)
Duplex:	Full/Half	Full/Half
Control and Monitoring		
Local:	Front panel operation, LCD display	Front panel operation, LCD display
GUI:	Web GUI	Web GUI
SNMP:	SNMPv1/v2c	SNMPv1/v2c
System		
Built-in Testing Signal:	Video: Color Bars Audio: Sin Wave Signal (-18/-20dBFS)	N/A
RS-232C Baud Rate:	1200 ~ 115200 baud	1200 ~ 115200 baud
Flow Control:	Select from None/Hardware selectable (CTS, RTS only)	Select from None/Hardware selectable (CTS, RTS only)
Physical and Power		
Power:	DC12V – Ships with AC conversion adapter (AC100-240V, DC12V)	DC12V – Ships with AC conversion adapter (AC100-240V, DC12V)
Dimensions – WxHxD:	8.27 x 1.61 x 11.81 inches 210 x 41 x 300 mm (Excluding protruding sections)	8.27 x 1.61 x 11.81 inches 210 x 41 x 300 mm (Excluding protruding sections)
Weight:	4.85 lbs. (2.2 kg)	4.85 lbs. (2.2 kg)
Operating Temperature:	32 to 104° F (0~40°C)	32 to 104° F (0~40°C)
Humidity:	30% to 80% (Non-condensing)	30% to 80% (Non-condensing)
Conformities:		
Rackmount:	Rails included	Rails included