



## FEATURES

**End-to-end Latency as low as 40ms (format dependant)**

**Up to 50% bit-rate reduction compared with H.264**

**Encoding of 4x simultaneous HD signals from a single 1RU unit (QuadSync mode)**

**True 4K/UHD Encoding with HDR (OPTION)**

**IP and DVB-ASI Out**

**SRT stream decoding and ST2022-7 packet switching**

**Comprehensive touch-screen front panel display**

**Optional ST-2110 interface and JPEG XS decoding\***

**Legacy H.264 and MPEG2 Encoding also supported\***

## BENEFITS

**High density, low latency encoding make Onyx ideal for remote production**

**Reduced hardware costs - encodes 4x HD signals simultaneously**

**Software upgrade to 4K/UHD**

**Feature-rich interfaces and options**

# Onyx HEVC Encoder

Onyx HEVC is a broadcast quality H.265 Encoder, offering exceptional compression ratios on video resolutions up to 4K UHD. The Onyx Encoder is ideal for remote production applications over leased lines or satellite, handling 4x HD or 1x UHD/4K feed with ultra-low latency.

Onyx is a feature-rich family of professional broadcast encoders and decoders. Onyx encoders can stream across dual networks using a variety of IP formats including SRT, at bitrates of up to 120Mb/s. The use of ST2022-7 technology at the decoder ensures glitch free recovery from network errors or path fail over. For legacy systems and satellite modem connection the Onyx encoder is equipped with ASI inputs and outputs. Built in encryption mechanisms such as BISS and DES can be employed to protect valuable content.

The unique quad mode allows four non-synchronous HD inputs to be encoded with end-to-end latencies as low as 40ms, this high density and low latency of encoding is ideal for the coverage of live sporting events.

Each video output can support 2 stereo pairs of embedded audio or a single video can support 8x stereo pairs. Onyx can also be equipped with an optional analogue audio interface allowing two stereo analogue audio outputs as well as return 'talk back' audio interfaces.

SFP cages are provided for ST2110 interfacing (OPTION)

The separate control port offers web browser control and a front panel is supplied for local control and monitoring.

A dual input power supply is provided for use where redundant power systems are available.

**Connectors**

Video Out 1-4	3G / 12G SDI HD-BNC x 4
ASI Out	HD-BNC
Genlock	HD-BNC
Stream 1 / 2	1000Base-T ethernet RJ45 x 2
Control	1000Base-T ethernet RJ45
Serial Data	9-way D-type female
Analogue Audio In/Out	3x Hirose 6W Female (OPTION)
ST2110 I/O	SFP Cages (OPTION)
Single SFP Interface	HDMI or IP Gateway SFP
Mains In	IEC Connector

**Video Encoder**

Profiles	4K UHD. 4:2:2/4:2:0, 8/10-bit 2160p / 23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60
	HD. 4:2:2/4:2:0, 8/10-bit 720p / 50 / 59.94 / 60 1080i / 50 / 59.94 / 60 1080p / 23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60
	SD 4.2.2/4.2.0 480i / 29.97 576i / 25

**Latency (if used with Onyx Decoder)**

Encoder + Decoder	End-to end as low as 40ms (format dependant)
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**Audio Encoder**

Format	Embedded
Encoder	8 pairs LPCM/MPEG1-L1/MPEG1-L2

**Analogue Audio (OPTION)**

Audio Inputs	2x pairs, Mic/Line-level
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**Stream Inputs / Outputs**

DVB_ASI	
IP Interface	3 x 1000Base-T ethernet
IP Stream Format	Unicast / Multicast / UDP / RTP / SRT
IP Stream Rate	120Mb/s maximum
Packet Switching	ST2022-7

**HDR/WGC**

We support	Rec. ITU-R BT.2100-2 (PQ and HLG) Rec. ITU-R BT.2020
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**Indicators**

Display	Full colour capacitive touch-screen
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**Control**

Front panel touch-screen	
Remote	IP web-browser Control RS232

**Dimensions**

Size (WxDxH)	482mm x 352mm x 1RU
Weight	2.9Kg

**Power**

AC in:	2x 90-255VAC
DC in	9-36VDC (OPTION)

**Order Codes**

ONYX-E	Onyx HEVC Encoder Rack Unit
ONYX-D	Onyx HEVC Decoder Rack Unit
ONYX-DL	Onyx HEVC Decoder (de-featured, lower cost version - see separate datasheet)

**Options**

LIC-4K	Enable 4K/UHD Encoding (software license key)
LIC-BISS1	Enable BISS 1 Encryption
LIC BISS2	Enable BISS 2 Encryption
LIC-JPG	Enable JPEG-XS Decoding*
HWOPT-25G	Add ST2110 I/O*
HWOPT-AUD	Add Analogue Audio I/O
HWOPT-DCIN	Convert one AC input to DC 9-36V

**\* Future Development – please check for availability**

