

*Sapphire Rack-Mount*

**Sapphire HEVC is a broadcast quality H.265 codec system. Offering exceptional compression ratios on video resolutions up to 4K UHD. The Sapphire Encoder can be easily integrated into existing SNG truck or flyaway systems to provide a cost-effective upgrade to the latest encoding technology.**

#### Description

HEVC compression offers significant bitrate savings over traditional H.264 solutions, this saves broadcasters money on contribution bandwidth. HEVC also supports the new 4K UHD formats required for contribution. The additional efficiency of HEVC makes wireless transmission of 4K possible. Broadcasters need a simple and reliable HEVC codec to move their contribution systems forward, the Sapphire Codec from BWS is the ideal solution. For SNG users, the lower bit-rates achievable can deliver significant savings in space-segment costs compared with legacy H.264 systems.

Latency is critical in many broadcast applications and the Sapphire Codec is built to minimise latency without compromising quality. The 60mS end to end latency (70ms in 4K) makes the Sapphire solution suitable for all live events,

The Sapphire Codec system compresses a single 4K UHD input or up to 4 HD inputs in one unit. Each input can support 2 stereo pairs of embedded audio. Compressed streams are available as IP or on DVB\_ASI for interoperability.

The encoder connects to existing transmission equipment via a single ASI co-ax cable for easy upgrade.

#### Features:

- Up to 50% bit-rate reduction compared with H.264
- Transmission of 4x simultaneous HD signals up to 1080p50/59
- Transmission of true 4K UHD signals with HDR
- Ultra-low Latency for live applications
- IP and DVB-ASI in/out
- Multiple mounting kits available for compatibility with existing SNG transmitters
- Legacy H.264 and MPEG2 Encoding also supported

#### Benefits:

- Reduce Space-segment costs by up to 50%
- Reduced hardware costs - encodes 4x HD signals simultaneously
- Software upgrade to 4K/UHD
- Cost-effective – uses existing modulators & RF systems

**Specifications**

**Connectors**

HDSDI 3G 1-4	4x BNC Female 75 ohm
ASI IN	BNC Female 75 ohm
ASI OUT	BNC Female 75 ohm
Network	RJ45
AC In	IEC

**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

Legacy encoding modes	H.264 and MPEG2
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**Latency (if used with Sapphire Decoder)**

Encoder + Decoder	60ms (70ms in 4K mode) with ULL option
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**Audio Encoder**

Format	Embedded
Encoder	MPEG-1 Layer2, AAC-LC, HE-AAC (Linear PCM in Ultra-Low Delay)
Quantity	4 pairs (1 pair in Ultra-Low Delay)

**Analogue Audio**

Format	2 pairs line / mic level
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**Stream Inputs / Outputs**

DVB_ASI	Transport stream to 60Mb/s
IP Interface	10/100/1000 base-T

**Indicators**

Display	Hi-brightness OLED
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**Control**

Local	Joystick and menu screen
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Remote	IP web browser Control RS232 (module only)
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**Dimensions**

Size (WxDxH)	210x352x1RU
Weight	1.9Kg
Mounting	Side-by-side mount kit available as an option

**Power**

AC In:	90-255VAC 15W @ 4K Encoding
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**Order Codes**

SAPPHIRE-HEVC-ASI-ENC	Rack Unit - 4x HD Encode
SAPPHIRE-ULL-ENC	Ultra-Low Latency Upgrade Licence (60ms HD, 70ms 4K)
SAPPHIRE-HEVC-4K-ENC	4K Encoding Upgrade Licence
SAPPHIRE-HEVC-IP-ENC	IP Encoding Upgrade Licence
SAPPHIRE-1RU	Full-width Rack Mount Kit (single unit in 1RU)
SAPPHIRE-DUAL1RU	Side-by-side Rack Mount Kit (2x units in 1RU)

