

*Sapphire Cameraback*

**Sapphire HEVC is a broadcast quality HEVC codec system. Offering exceptional compression ratios on video resolutions up to 4K UHD. The Sapphire Encoder/Decoder supports low latency, making it ideal for live applications such as wireless cameras, ENG and SNG.**

### Description

HEVC compression offers significant bitrate savings over traditional H.264 solutions, this saves broadcasters money on storage and 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.

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.

Available in compact, cameraback, half-width rack-mount and OEM packages. The cameraback unit is supplied with a bracket to mount your existing COFDM transmitters - enabling users to convert even legacy SD systems into HEVC/4K operation!

### Features:

- High quality HEVC codec
- Low Latency (60ms 'glass to glass') for live applications
- Transmission of true 4K UHD signals with HDR
- Transmission of 4x simultaneous 1080p50/59 HD
- IP and DVB-ASI in/out
- Options for HDMI, 12G-SDI, SMPTE 2022-6 via SFP modules
- Multiple chassis formats available for compatibility with existing COFDM transmitters
- Available in module format

### Applications:

- Multi-camera on-boards in high quality
- Ariel Relay
- Super Slo-Mo
- Low Delay 4K Wireless

**Specifications**

**Connectors**

HDSDI 3G 1-4                   DIN 1.0/2.3 Female  
 ASI                                BNC Female 75 ohm  
 Network                         RJ45  
 DC In                             Hirose HR10 Male

**Video Encoder / Decoder**

**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

**Latency**

Encoder + Decoder             60ms (70ms in 4K mode)

**Audio Encoder / Decoder**

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

**Stream Inputs / Outputs**

DVB\_ASI                        Transport stream to 40Mb/s  
 IP Interface                     10/100/1000 base-T  
 IP Stream Format                Unicast / Multicast / RTSP

**Indicators**

Display                         Hi-brightness OLED  
 4x LED                         Video Input Active

**Control**

Local                             Joystick and menu screen

Remote                         IP web browser Control  
                                       RS232 (module only)

**Dimensions**

Size (WxDxH)                 See below  
 Weight                         700g  
 Mounting                       Screw fixings for battery  
                                       plate

**Power**

DC In:                         9 – 18V  
                                       15W typical @ 4K  
                                       encoding



*Sapphire Module for Integration*

