Professional UHD/4K Video Codec
QVCODEC4K HEVC/MPEG4-AVC Encoder/Decoder

QVidium's QVCODEC4K codec is a reliable, high-performance solution for the encoding and decoding and transport of HD and UHD/4K video and audio signals for broadcast.

Advanced HEVC 4:2:2/4:2:0 encoding and decoding, coupled with QVidium's patented ARQ Video Transport and Error correction, helps to maintain broadcast quality video over nearly any IP network, including wireless networks and the Internet.

The QVCODEC4K is QVidium's® next generation professional line of advanced video encoders and decoders; a line of compact, powerful and cost-effective products designed for real-time encoding, and decoding for Content Gathering, Monitoring, and transmission of broadcast quality video over IP networks.

QVidium's advanced video transport couples broadcast and networking standards with patented error correction to take advantage of the inherent flexibility of IP and the Internet, providing broadcasters an efficient, affordable and scalable solution for professional quality video over nearly any IP network.

The QVCODEC4K provides HEVC and MPEG4-AVC video compression and decompression, up to **2160p50/60 10-bit 4:2:2**, along with support for up to 8 audio channels, multicasting, and multi-unicasting to allow cost-effective audio/video broadcast solutions. The QVCodec4K has the unique ability to simultaneously encode and decode Ultra-High Definition video.

Applications

- Professional Broadcast Video Contribution
- Live Event / Satellite Uplink
- Confidence Monitoring
- IPTV Streaming to CDNs (Facebook, Youtube)
- Remote Professional HDR Movie Color Grading
- Broadcast AppleTV, Roku, etc.

Key Features

- **Real-time UHD/4K Video Encoding and Decoding**
  - HEVC / MPEG-4 AVC UHD/4K Video Encoding/Decoding
  - 4:2:2 and 4:2:0 8-bit and 10-bit Encoding/Decoding
  - 1x 12G-SDI I/O Interface
  - 4x 3G-SDI I/O Interfaces (option)
  - 2x SFP+ for 12G-SDI and 10 GigE
  - HDR Metadata support
  - Video resolutions up to **2160p50/60**
  - IP Streaming and USB or Remote File Record & Play-out
  - AES-128, AES-192, AES-256 Encryption
  - DTLS Security: RSA and Elliptical Keys
  - Quad 3D-SDI options for 4k input/output (option)
  - 8-channels of Audio (4 stereo pairs)
  - 7.1 AAC Surround-Sound Audio
  - 4 Independent 1080p60 Encoder/Decoder Channels (option)
  - 2 Independent 2160p30 Encoder/Decoder Channels (w/SFP)
  - Video Encoding or Decoding up to 3840x2160p60
  - Simultaneous Encoding and Decoding up to 3840x2160p30
- **Robust transmission of Video & Audio**
  - Patented QVidium® ARQ error correction
  - SRT, Zixi, and RIST Simple and Main Protocols
  - MPEG Transport Stream, RTMPS, HLS, MPEG-DASH
- **Durable, Compact, cost-effective solution**
  - Complete transmitter / receiver ½ width - 1RU
  - Can install 2 units in a single 1RU slot
  - Internal AC/DC power supply and backup DC input
  - Internal fan for high temperature environments
- **Secure, User-friendly Configuration and Control**
  - WEB-based Remote Configuration & Control over Internet
  - SSH Tunneling for Remote Access Bypassing Firewalls
  - Built-in Whitelist-based Firewall
  - Extremely Secure Protection from Internet Hackers

Specification

Video/Audio Interfaces

Video I/O:	1x BNC : 12G-SDI / 3G-SDI / HD-SDI I/O (SMPTE 424M, 292M, 259M), 1x SDI SFP+ 4x BNC: 3G-SDI/HD-SDI I/O (option)
Genlock Input:	1x BNC (Bi-level & Tri-level Genlock, option)
Audio Outputs:	SDI Embedded 8x Channel Audio

Video

HEVC Profiles:	Main, Main Intra, Main10, Main10 Intra, Main 4:2:2 10, Main 4:2:2 10 Intra up to Level 5.1 High Tier
AVC (H.264) Profiles:	Baseline, Main, High, High10, High 4:2:2, High10 Intra, High 4:2:2 Intra to Level 5.2
Chroma Sampling:	4:2:0, 4:2:2
Bit Depth:	8-bit, 10-bit
Resolution:	3840x2160p, 1920x1080, 1280x720
Frame Rates:	23.98/24/25/50/59.94/60p
Enc-Dec Latency:	500ms (30 frames)
Wide Color Gamut:	BT.709, BT.2020
HDR:	BT-2020/SMPTE-2084 HDR-10 & PQ10
Rate Control:	VBR
Encoding Bitrate:	500Kbps to 60 Mbps
SDI Time Codes:	SMPTE 12M-1/SMPTE12M-2 (option)

Audio

Audio Decoding:	MPEG-1 Layer2, AAC-LC, Opus Dolby AC3 Pass-through (option)
Audio Encoding:	AAC-LC, Opus
Audio Format:	Up to 4 stereo pairs, 7.1 AAC
Sample rate:	48 KHz @ 16-bit, 20-bit, 24-bit decode
Bit rate:	16 Kbps (mono) to 384 Kbps (stereo)
Audio Channels:	8 channel SDI embedded audio

IP Encapsulation

IP Encapsulation:	MPEG-2 TS over RTP/UDP/IP, UDP/IP, RTSP, HLS, MPEG-DASH, RTMP, RTMPS
IP Bitrate:	160 Kbps to 60 Mbps
Error Correction:	QVidium® ARQ (feedback-based) US Patents:7551647 & 7522528; SRT, Zixi and RIST (main & simple) Protocols
Encryption:	AES256, DTLS/GRE (RIST Main Profile)

Storage & Network Interfaces

Networking ports:	10/100/1000 Gigabit Ethernet 1x SFP+ for 10 Gigabit Ethernet
Protocols:	IEEE802.3 Ethernet RTP, IPv4, IPv6, TCP/UDP, IGMP v3
Connectors:	1x USB3.0 Type-A
External storage:	Flash & Hard drives via 1x USB3.0 Type-A connector, Micro SD Card

Control, Management, and Monitoring

Type:	10/100/1000 Base-T Gigabit Ethernet
Control:	HTTPS Web Interface
Ethernet:	1x RJ45, 1x SFP
Maintenance Port:	1x USB2.0 Type-B Connector
Monitoring:	DisplayPort

Physical and Power

Input Voltages:	100-240VAC, 50-60Hz or 8-20 VDC
Typ. Input Current:	0.2A@120VAC, 1A@12VDC
Input Power:	Maximum: 40W
Weight:	.28 lbs / 1.3 Kg
Chassis:	1.75 x 8.25 x 6.3 in / 210 x 160 x 44 mm Two units in 19" 1RU rack space
Installation:	19'' 1 RU rack mounting kit Coupler for 2 units in 1 RU slot (Both rack-mount accessories optional)

Environmental Conditions

Operating Temp.:	0°C - +50°C
Storage Temp.:	-20°C - +70°C
Maximum Humidity:	< 95% non condensing
Cooling:	Front to rear and sides airflow

Compliance

CE:	73/23/EEC (Low voltage equipment) 89/336/EEC (Electromagnetic compatibility)
Safety:	IEC/EN 62368-1:2018
EMC:	EN55022, EN55024, EN6100-3-2

QVCODEC4K Rear View: Shown with **QUAD3G-SDI-I/O** option

Ordering Information

Model #: QVCODEC4K (HW options: **QUAD3G-SDI-I/O, QUAD4K-2SI-OUT, QUAD4K-2SI-IN, RM-KIT, Dual RM-Kit**)

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