QVPRO - Professional Video Codec
3G/SD/HD-SDI, HDMI, ASI, IP inputs/outputs
H.264 & MPEG-2 Video Codec - Encoder/Decoder/Transcoder

QVPRO Codecs provide reliable, high-performance solutions to coding and transport of SD and HD video and audio signals for broadcast applications.

Advanced H.264 High Profile compression, coupled with QVPRO’s patented Video Transport and Error correction, maintains broadcast quality video distribution over nearly any IP network, including wireless networks and the Internet.

Applications
- Professional broadcast video distribution
- Live Event / Electronic News Gathering
- Confidence monitoring
- Video conferencing
- IPTV systems

Key Features
- Real-time HD Video Encoding & Decoding
  - MPEG-4 AVC / H.264 High, Main and Baseline
    - Only 1.5 to 6 Mbps required for HD Encoding
    - Supports CBR & VBR bitrates up to 30 Mbps
    - Up to level 4.1
  - MPEG-2 Main Profile
  - Up to 8 audio channels and AC3 Pass-through
  - Video formats up to 1080/60p, PAL & NTSC
  - IP or ASI encoded audio/video input and output
  - Full support for Closed Captioning & Tele-text
  - Up & Down Scaling and frame rate conversion
- Dual encoding up to 1080i from same input.
  - Can stream to two locations
- Bi-directional simultaneous encode and decode (optional)
- Real-time High Quality Transcoding
  - DVB-ASI or Ethernet, input or output
  - Up & Down Scaling and frame rate conversion
- Robust transmission of Video & Audio
  - Patented QVidium® ARQ error correction
  - Industry standard ProMPEG FEC
  - MPEG-2 Transport Stream
- Compact, cost-effective solutions
  - Complete transmitter / receiver ½ width - 1RU
  - User configurable as transmitter and receiver
- User-friendly configuration and control
  - WEB-based remote configuration & control
  - SNMP Trap support for NMS systems

The QVPRO is part of the professional line of advanced video codecs; a line of compact, powerful and cost-effective products designed for real-time encoding, decoding and transcoding for Content Gathering, Monitoring, and Distribution of broadcast quality video over IP networks.

QVPRO’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 distribution quality over nearly any IP network.

The QVPRO provides H.264 High Profile video compression, up to 1080/60p, along with support for up to 8 audio channels, AC3 pass-through, and closed captioning to allow cost-effective audio/video broadcast and IPTV solutions.

QVPRO H.264/MPEG2 IP Video Codec
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Specification

**Video/Audio Interfaces**

**Input:**
1x 3GSDI / HDSDI / SDI / ASI (SMPTE 425M (A&B), 424M, 292M, 259M, DVB-ASI),
1x HDMI (1080/p & 720p)

**Output:**
1x 3GSDI / HDSDI / SDI / ASI (SMPTE 425M(A&B), 424M, 292M, 259M, DVB-ASI),
1x HDMI (1080i/p, 720p, 480i & 576i)

**Connectors:** 2 Female BNC (SDI/DVB-ASI), 2 HDMI

**Video Encoding & Transcoding (HD & SD)**

- **Video Encoding:**
  - MPEG4-AVC (H.264)
    - High Profile, up to Level 4.1
    - High, Main, and Baseline Profiles
  - MPEG-2 Main Profile
  - Constant bit rate or Variable bit rate
  - Bit rate: 128 Kbps to 30 Mbps
  - Transcoding:
    - H.264 ↔ MPEG-2
    - MPEG-2 ↔ H.264
    - H.264 ↔ H.264, adjustable bit rate
  - Constant bit rate or Variable bit rate
- **Closed Captions:**
  - EIA 608 and EIA 708*, HD & SD

**Audio Encoding / Decoding / Transcoding**

- **Audio Encoding:**
  - MPEG-1 Layer2, MPEG-2 & MPEG-4 AAC
  - AC3 Pass-through on SDI*
- **Sample rate:** 32, 44.1, & 48 KHz
- **Bit rate:** 16 Kbps (mono) to 384 Kbps (stereo)
- **Audio Channels:** 1 mono, 1 stereo pair, 2 stereo pair, 4 stereo decode
- **Transcoding:**
  - MPEG1Layer2 ↔ MPEG4AAC
  - AC3 Pass-through

**IP Encapsulation**

- **IP Encapsulation:** MPEG-2 Transport Stream over RTP/UDP/IP or UDP/IP
- **IP Bitrate:** 160 Kbps to 30 Mbps, 15 Mbps with ARQ
- **Error Correction:** QVidium® ARQ (feedback-based)
- **US Patents:** 7,551,647 & 7,522,528
- **ProMPEG FEC COP 3.2** (SMPTE 2022)

**Video Resolutions**

- **SD Video:** 625 lines, 25 frames/s (576i)
  - 525 lines, 29.97 frames/s (480i)
- **HD Video:** 1080p60/50/30/25/24, 1080i60/50, 720p60/50
  - (optional)

External Storage

- **Devices:** USB Hard drives via 2 USB connectors

Network Interfaces

- **Type:** 10/100/1000 Base-T Gigabit Ethernet
- **Protocols:**
  - IEEE802.3 Ethernet
  - RTP, IPv4, TCP/UDP, IGMP v3
- **Connectors:** 2 RJ45

Control and Management

- **Type:** 10/100/1000 Base-T Gigabit Ethernet
- **Features:** Element control through HTTP/Web.
- **Protocols:**
  - HTTP, SNMP v2 traps
- **Protocols:**
  - Connectors: RJ45
  - USB Ports: 2
- **Maintenance Port:** Two RS232 9 pin D-SUB

Physical and Power

- **Input Voltages:** 120-240VAC, 50-60Hz or 7-20 VDC
- **Input Currents:** 150-75 mA for AC or 3.0-1.0 A for DC
- **Input Power:** 16W
- **DC Connector:** 2.5mm I.D. x 5.5mm O.D. x 9.5mm Female
- **Chassis:** 209 x 182 x 44 mm (WxDxH)
- **Environment:** Two units in 19” 1 RU rack space
- **Installation:** 19” 1 RU rack mounting kit
- **Environment:**
  - Operating Temperature: 0°C - +55°C
  - Storage Temperature: -20°C - +70°C
  - Relative Humidity: 5% to 95% (non condensing)

Environmental Conditions

Compliance

- **CE:** 73/23/EEC (Low voltage equipment)
- **93/36/EEC (Electromagnetic compat bility)**
- **Safety:** IEC60950 and EN60950
- **EMC:** EN55022, EN55024,EN61000-3-2

* Currently not available

Front & Rear Connection Diagrams

**Ordering Information**

**Model #: QVPRO**

**Options:**
- Opt-1080i - HD H.264 and MPEG-2 Encoding/Decoding/Transcoding - 720p, 1080i
- Opt-1080p - HD H.264 and MPEG-2 Encoding/Decoding/Transcoding - 720p, 1080i, 1080p
- Opt-BiDir - Bi-directional simultaneous encode and decode

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