



Applications

- Studio-Transmitter-Link
- Contribution

Features

- Up to 16 AES3 or 8 analog outputs in 1RU
- RAVENNA/AES67/Livewire+/ST2110-30/-31 outputs
- Quad 10/100/1000 Ethernet interfaces with dynamic role assignment
- Highly energy efficient
- Remote control using REST API, SNMPv2c, Ember+, NMOS IS-04/IS-05
- State-of-the-art security

The highest density IP audio decoder.

Building on the success of the Q8V Codec System software platform, the Q9X-D is the new IP audio decoder from Qbit.

Decoding up to 16 channels in 1RU, it sets new standards in density. Up to 8 channels may be output using analog audio, 16 channels may be output either to AES/EBU or via RAVENNA/AES67.

The device can receive a transport stream or elementary stream via IP as well as internet radio streams. SRT and RIST are supported to assist in error-resilient transport of streams over the internet.

Additionally, a file backup may be purchased as an option that allows to use a locally stored file as a failsafe.

As all other devices using the Q9X platform, it offers 4 freely assignable network interfaces to adapt to every application.

State-of-the-art encoding algorithms such as xHE-AAC(R) and well-established algorithms such as MPEG-1 Layer II/III and AAC are supported.

The system has a flexible licensing model that allows field upgrading of channel counts and options as all devices are always delivered with a full channel configuration.

Q9X-D IP Audio Decoder

Specifications



Input Protocols: IP

MPEG-2 Transport Stream (according to ISO 13818-1)	• SRT, RIST, RTP, Plain UDP • Forward Error Correction (according to Pro-MPEG Code of Practice #3, release 2) • Unicast, Multicast (IGMPv2/v3) • Service Information (according to ETSI EN 300 468)
Elementary Stream (according to RFC3550, RFC3551, RFC3016, RFC3640)	• SRT, RIST, RTP, Plain UDP • Unicast, Multicast (IGMPv2/v3)
Internet Radio Streaming	• Icecast2/SHOUTcast • HLS • MPEG-DASH

Baseband Audio Output

Digital	• 8x AES/EBU, XLR (IEC 958), shared with analog outputs 1-4 • 4x AES/EBU, on 1x Sub-D 25 (TASCAM pin assignment) • 4x AES/EBU, on 1x Sub-D 25 (TASCAM pin assignment), shared with analog outputs 5-8
Analog	• 4x Stereo Channels, on 8x XLR, shared with digital outputs 1-8 • 4x Stereo Channels, on 1x Sub-D 25 (TASCAM pin assignment), shared with digital outputs 13-16
Performance (Analog)	• 24-bit high quality D/A converters • THD+N: < 0.01 % @ 1 kHz • Crosstalk attenuation: > 100 dB @ 1 kHz • S/N ratio (weighted): > 80 dB
Sample Rates (Digital/Analog)	32, 48, 96, 192 kHz
Channel Configurations	• Mono (L/R/Mix) • Dual Mono • Stereo, Joint Stereo

Audio-over-IP Input/Output

Standards	RAVENNA, AES67, SMPTE ST2110-30/-31, Axia Livewire+™, Dante® in AES67 mode
Supported Formats	L24, L16, AM824
Number of Channels	Up to 64 per Stream
Sample Rates	32, 48, 96, 192 kHz
Discovery	mDNS, SAP, Manual Configuration
Channel assignment by internal crossbar	
Seamless Protection Switching (according to SMPTE ST2022-7)	

Ancillary Data Output

Hardware	• 8x RS232 Outputs, on 1x SUB-D 26 ◦ Breakout cable (SUB-D 26 -> 8x SUB-D 9)
UDP	• 16x UECP-over-UDP outputs (according to UECP v7.1)
Other formats on request	

Encoding Algorithms (Decoding)

• MPEG-1/2 Layer 2 (according to ISO 11172-3, ISO 13818-3) • MPEG-1/2 Layer 3 (according to ISO 11172-3, ISO 13818-3) • AAC-LC, HE-AACv1, HE-AACv2, AAC-LD, AAC-ELD (ADTS and LOAS framing, according to ISO 13818-7, ISO 14496-3) • xHE-AAC® (according to ISO 23003-3, ISO 14496-3/Amd 3) • AC-3/E-AC-3 (according to ATSC A/52) • Opus • G.711 μ-Law/A-Law, G.722 • Others on request	
Audio Channel Configurations (dependant on algorithm)	• Stereo, Joint Stereo • Mono (Extract/Mixdown) • 5.0/5.1 • 7.0/7.1
Embedded Metadata	• RDS/UECP for DVB • ID3 Tags for Internet Radio Streaming

Network Interfaces

4x Ethernet interfaces (IEEE 802.3, RJ-45, 10/100/1000 Mbps)

Isolation of all networks by integrated firewall

Roles can be freely assigned to any of the interfaces (Management, Data, etc.)

WE TRANSPORT YOUR AUDIO

Specifications (continued)

System Configuration, Control and Monitoring

HTML5 Web UI

- Remote Control
 - REST API
 - EmBER+
 - NMOS IS-04/IS-05
 - SNMPv2c

- User Management
 - Fine-grained permission control
 - LDAP(S) authentication

Power Requirements

- Connectors
 - 1x IEC60320 C14
 - 1x IEC60320 C14 (for 2nd power supply 100-230 V AC)
 - 1x Neutrik powerCON (for 2nd power supply -48 V DC)

- Power Supply
 - 100 to 240 V AC +/- 10%, 50 to 60 Hz
 - -48 V DC
 - Redundant Power Supply

Power Consumption < 20 W

Physical Parameters

Chassis 19", 1 RU

Size (W/D/H) 483 mm / 400 mm / 44 mm

Weight 6 kg

Environmental Conditions

Operating Temperature 0 to 45 °C

Storage Temperature -20 to 70 °C

Humidity < 95 % (non-condensing)

Legend: ● Default ○ Optional