

The System's primary function shall be to facilitate Audio and Video Distribution over a standard 1 Gigabit network. System includes support for Real-Time 4K and HDR content transmission.

System shall be capable of being supplied as factory configured to consultant/architect's specification for video, audio, and IP settings.

System end-to-end latency shall not exceed 1 frame of latency (including encoding and decoding).

The System shall be capable of supporting an unlimited number of endpoints.

The Encoder graphical user interface and built-in dashboard functions shall not require custom or project specific programming or API development.

Encoders shall provide control without the need for any additional components. Any system requiring the need of a control system interface or system discovery device shall not be accepted.

System shall be capable of control from a variety of third-party manufacturers, supported systems include (among others) Crestron, Extron, AMX, RTI, QSC, and Symetrix.

System shall be capable of presenting live thumbnail previews to 3rd party control UI, for all content on encoders and decoders, in JPEG snapshot format, updated once per second.

The System shall support integration with enterprise grade software management platforms to provide complete system monitoring, management, and control.

Control of 3rd party equipment via Encoder built-in control ports: RS-232 serial control, IP control, CEC.

System shall be able to be controlled using ASCII-readable HTTP(S) GET/POST, UDP Unicast, or UDP Multicast API.

System shall provide SSH security capability.

System shall provide 802.1X security capability.

System shall provide AES stream encryption capability.

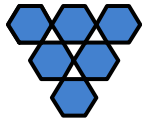
System shall support JPEG2000 codec with optimization for computer-generated content as well as support for fast-motion, cinema-grade content.

System shall support USB-HID.

System shall be TAA compliant.

The AV over IP System shall not require proprietary network management software or hardware.

The AV over IP hardware shall not require proprietary or manufacturer specific Ethernet switches.



DuetE-2 • Encoder

A&E SPECIFICATIONS

The system shall support the following digital audio formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, DTS:X, LPCM up to 8 channels.

Encoder shall support HDMI 2.0, EDID, CEC.

The Encoder shall include two HDMI inputs, and one HDMI output.

Encoder shall support HDCP (High-bandwidth digital copy protection) for both version 1.x and 2.2.

AV over IP services (Audio, Video, USB, KVM, RS-232, IR, and GPIO) shall be capable of independent routing.

USB and KVM routing shall not add additional latency to AV transmission.

USB peripheral device switching functionality shall support: Whiteboards, Touch screens, Game controllers, Mobile devices, Headsets, Flash drives.

The Encoder shall include USB-C input for connections for Mac and other laptops.

The Encoder shall include USB-B for USB over IP functionality.

Encoder shall provide two (2) input and two (2) output GPIO (General-purpose input/output) ports.

Encoder shall provide one IR input port (shared with GPIO input) and one IR output (shared with GPIO output) port.

Encoder shall be capable of being powered by standard PoE (Power over Ethernet), in accordance with 802.3af, with a maximum power consumption less than 15.4 watts.

The Maximum bandwidth requirement per encoder stream shall be 1 Gigabit.

Encoder shall be capable of 1080p and 4K resolutions at less than 1GB total throughput.

Encoder shall support de-embedding of LPCM audio up to 8 channels from the HDMI input.

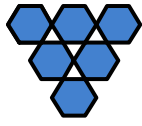
Encoder shall be capable of LPCM audio format compatible with QSC Q-SYS DSP, Media Stream Receiver (MSR) object.

Encoder shall include a single Ethernet port for Video over IP and Dante®/AES67 functionality with VLAN tagging capability to separate Video & Audio network traffic as needed.

Encoder shall be capable of de-embedding up to 2 channels of LPCM audio from the HDMI input and 2 channels of balanced analog audio (Euroblock connector) and making it available as a Dante®/AES67 source.

Encoder shall be capable of receiving up to 4 channels of network audio from the Dante®/AES67 port and embedding it into the AV stream audio.

Encoder shall support balanced audio input via 5 pin Euroblock 3.81mm pitch connector (rear panel).



DuetE-2 • Encoder

A&E SPECIFICATIONS

The Encoder shall be capable of separate VLAN tagging for video and audio (Dante) networks.

The Encoder shall include one (1) PoE+ Main Ethernet port for audio, video, and control.

The Encoder shall include one (1) Expansion Ethernet port for additional IP devices, with PoE sourcing (PSE) output (when supplied with PoE+ to Main Ethernet port).

Encoder control/video/audio (Dante) network connection shall support 10/100/1000 Mbps, auto-switching, auto negotiating, auto-discovery, full/half duplex, DHCP.

Encoder stream audio transmission shall be selectable between Dante®. analog, and HDMI audio.

Encoder shall support IR (infrared) output over IP capability to send IR commands to TVs, Cable Boxes, and other devices.

Encoder shall support IR (infrared) input over IP capability to receive IR commands from remote controls, control systems, and other devices.

Encoder shall have no moving parts, including but not limited to cooling fan.

The Encoder shall be flange mountable to surface, or shelf.

The Encoder shall be rack mountable (Front or Rear facing forward) with optional rack mount kit.

The Visionary encoder shall be the DuetE-2 Encoder.