



The System's primary function shall be to facilitate Audio and Video Distribution over a standard 1 GbE or higher Ethernet 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 be capable of 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 receiving control from a variety of third-party manufacturers, example 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.

The Encoder shall enable control of 3rd party equipment via built-in control ports: RS-232 serial, IP, and 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 based 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.

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 dual HDMI ports: input and loop out.

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

AV over IP services (Audio, Video, USB, KVM, RS-232, 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, and Flash drives.

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 AV stream shall be 1 Gigabit.

Encoder shall be capable of transmitting 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 stream audio transmission shall be selectable between analog, and HDMI audio.

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 Encoder shall be the Visionary Solutions E4100.