visionary
NETWORK AUDIO VIDEO

E5100 • ENCODER **A&E SPECIFICATIONS**

General Description

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 1080P and 4K60 4:4:4 content transmission.

The system end-to-end latency shall be capable of 1 frame of latency (including encoding and decoding).

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

The system shall be capable of Mass Configuration, allowing Auto Discover and configuration of all Visionary encoders & decoders on the network without the need for any external hardware.

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

The system shall be the Visionary PacketAV 5000 series.

Encoding

The encoder shall be capable of transmitting 1080p and 4K60 4:4:4 resolutions at less than 1GB total throughput.

The encoder shall support Dynamically Optimization (Adaptive) bit-rate compression CODEC w/built-in AI for computer-generated content as well as support for fast-motion, cinema-grade content.

The encoder shall be capable of transmitting full motion MJPEG substream.

Audio

The encoder 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.

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

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

The encoder stream audio transmission shall be selectable between analog and HDMI audio.

The encoder shall support Audio Return Channel (ARC) over IP.

Control

The encoder graphical user interface shall not require custom or project specific programming or API development.

The encoder services (Audio, Video, USB, KVM, RS-232, and GPIO) shall be capable of independent routing.

The 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.
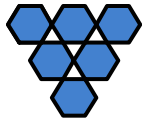
The encoder shall provide control from a web browser without any additional hardware or 3rd-party control device.

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

The encoder shall be capable of control from a variety of 3rd-party manufacturers, supported systems include (among others) Crestron, Extron, AMX, RTI, QSC and Symetrix.

The encoder 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 encoder shall be capable of presenting live thumbnail previews to a web browser in JPEG snapshot format without a 3rd party control device.

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

Communication & Control of External Devices

The encoder shall support HDMI 2.0, EDID, CEC.

The encoder shall support HDCP (High-bandwidth digital copy protection) for versions 1.x, 2.0, 2.2 and 2.3.

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

The encoder shall support USB-HID.

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

The encoder shall support KVM Multi Display Roaming. Allowing switching of keyboard and mouse control automatically and seamlessly between PC's by moving the cursor across the boundaries of a display and 'roaming' to adjacently mapped displays.

The encoder USB peripheral device switching functionality shall support: Whiteboards, Touch screens, Game controllers and Flash drives.

The encoder USB over IP shall support Isochronous transfer mode to support webcams using H.264 or MJPEG compression that transmit from decoder to encoder for codec ingest.
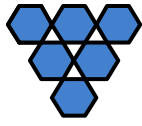
Connectors

The encoder shall include one HDMI input and one HDMI output.

The encoder shall include one Main Ethernet PoE port for video and control.

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

The encoder shall provide RS-232 via 5 pin Euroblock 3.81mm pitch connector (rear panel).

The encoder shall include unbalanced audio input via 4 pin Euroblock 3.81mm pitch connector (rear panel).

The encoder shall provide GPIO via 5 pin Euroblock 3.81mm pitch connector (rear panel).

Network

The encoder shall be capable of LLDP, allowing for dynamic control of endpoints based on automatic discovery of physical location.

The encoder shall not require proprietary network management software or hardware.

The encoder hardware shall not require proprietary or manufacturer specific Ethernet switches.

The encoder network connection shall support 10/100/1000 Mbps, auto-switching, auto negotiating, auto-discovery, full/half duplex, DHCP.

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

Power

The 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.

Enterprise Security

The encoder shall provide SSH security capability.

The encoder shall provide 802.1X security capability.

The encoder shall provide AES256 stream encryption capability.

Form Factor

The 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.
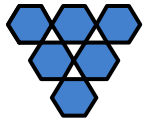
Compliance

The encoder shall be TAA compliant.

The encoder shall be CE compliant.

The encoder shall be FCC compliant.

The encoder shall be C-tick compliant.

The encoder shall be RoHS compliant.

The encoder shall be WEEE compliant.

The Encoder shall be the Visionary E5100 Encoder.