VISIONARY
NETWORK AUDIO VIDEO

DuetD-5 • Decoder

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.

Decoding

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

The decoder 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 decoder units shall provide integrated scaling with no additional latency.

The decoder shall support Dynamic OSD text overlay capabilities. Allowing the ability to overlay dynamic or fixed text on screen enables displaying of alerts, announcements, special instructions, clocks / timers, schedules, and other messaging.

The decoder switching transition between encoder streams shall not be greater than 1 second.

The decoder switching between sources of the same framerate shall transition cleanly.

The decoder shall support video wall functionality.

The decoder shall support video walls composed of up to 256 individual displays. One Decoder is required per display, supporting configurations of up to sixteen wide by up to sixteen high.

The decoder shall provide fully adjustable zoom capability and bezel compensation.

The decoder shall support video rotation 90/180/270 degrees.

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

Audio

The decoder 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 decoder shall support receiving 8 channels of LPCM audio from the AV stream and embedding it into the HDMI and USB-C output and 2 channels of balanced analog audio output (Euroblock connector).

The decoder shall be capable of receiving up to 4 channels of network audio (Dante®/AES67) and embedding it into the HDMI and USB-C output and 2 channels of balanced analog audio output (Euroblock connector).

The decoder shall be capable of receiving up to 4 channels of LPCM audio from the AV stream audio and making it available as a Dante®/AES67 source.

The decoder HDMI audio output shall be selectable between AV stream audio and Dante network audio.

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

Control

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

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

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

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

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

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

Communication & Control of External Devices

The decoder shall support HDMI 2.0, EDID, CEC.

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

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

The decoder shall support USB-HID.

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

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

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

The decoder 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 decoder shall include one HDMI output.

The decoder shall include one USB-C output capable of transmitting 720, 1080 and 4K resolutions.

The decoder shall include one Main Ethernet PoE (PD) port for audio, video and control.

The decoder shall include one Expansion Ethernet PoE (PSE) port for additional IP devices, with PoE (PSE) when PoE+ is supplied to Main Ethernet PoE (PD) port.

The decoder shall include two USB-A for USB over IP functionality.

The decoder shall provide two input and two output GPIO (General-Purpose Input/Output) ports.

The decoder shall provide one IR output (shared with GPIO output) port.

The decoder shall support balanced audio output via 5 pin Euroblock 3.81mm pitch connector (rear panel).

Network

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

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

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

The decoder 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.

The decoder control/video/audio (Dante®/AES67) 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 decoder 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 decoder shall provide SSH security capability.

The decoder shall provide 802.1X security capability.

The decoder shall provide AES256 stream encryption capability.

Form Factor

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

The decoder shall be flange mountable to surface or shelf.

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

Compliance

The decoder shall be TAA compliant.

The decoder shall be CE compliant.

The decoder shall be FCC compliant.

The decoder shall be C-tick compliant.

The decoder shall be RoHS compliant.

The decoder shall be WEEE compliant.

The decoder shall be the Visionary DuetD-2 Decoder.