Cisco AnyRes Live 9400

Product Overview

The Cisco® AnyRes Live 9400 represents a new generation of the Cisco AnyRes Live Family, with support for advanced encoding of live and high-definition (HD) video. It is redefining the video experience with best-in-class quality for real-time media-delivery applications such as live sports, 24-hour programming, Internet Protocol television (IPTV), enterprise, education, and government video.

The Cisco AnyRes Live 9400 delivers the highest-quality encoding using market-leading H.264 encoding or optionally using full-frame High-Efficiency Video Codec (HEVC) encoding technology developed by Cisco.

The Cisco AnyRes Live 9400 encoder is a fully optimized solution on the Cisco Unified Computing System™ (Cisco UCS®) server platform, including the possibility to input interface up to four full HD baseband video feeds as well as optional IP interfacing. The Cisco AnyRes Live 9400 can also be provided as pure transcoder without the SDI interface capture functionality.

With its easy-to-use interface, the Cisco AnyRes Live 9400 lets you configure encoding of your SD or HD-video source into either SD or HD single program transport stream (SPTS) services or turn your sources into multiple Internet-ready adaptive-bit-rate (ABR) streams, providing market-leading quality experiences.

This comprehensive, reliable platform has the flexibility to stream multiple formats to any device, including iPhones, iPads, smartphones, and PCs, as well as delivering pristine HD video to televisions.

Product Specifications

Table 1 lists specifications for the Cisco AnyRes Live 9400.

Table 1.   Product Specifications

| SDI Inputs	
Physical SDI interface: option	● Input interfaces: 4 x DIN 1.0/2.3 BNC, 75-ohm, break-out cable to standard BNC included ● Input SDI format: SMPTE 424M Level-A or Level-B, 1080p (up to 60 fps) ● Input HD-SDI format: SMPTE 292M, 1080i or 720p (up to 60 fps) ● Input: SD-SDI format: SMPTE 259, 480i29.97 or 576i25 fps
High definition	● HD 1920 x 1080, or 1280 x 720 ● Frame rates: 24, 25, 29.97, 30, 50, 59.94, and 60 fps
Standard definition	● SD 720 x 480i29.97 or 720 x 576i25
Audio	● Embedded audio: SMPTE 299M, up to 8 stereo pairs: PCM or precompressed

IP Inputs	
IP interface: option	● Input interfaces: quad GbE IP card in the mLOM (modular LAN-on-motherboard) slot

Video codecs	● AVC or MPEG2: 4:2:0
	  ◦ SD, HD, and full HD (1920 x 1080p50/59.94)
	● AVC: 4:2:2, 8- or 10-bit: option:
	  ◦ SD, HD, and full HD (1920 x 1080p50/59.94)

Audio input formats	● MPEG1-LII, AAC, AC3, and SMPTE 302M (PCM)
Transport mode	● MPEG2 transport stream (MPEG2-TS) over User Datagram Protocol (UDP)
Output Codecs	
HEVC: option	● Up to 1080p50/59.94/60 HEVC progressive output to TS, HLS, and MPEG-DASH ● SD and HD interlaced, 25- or 29.97-fps output to TS ● H.265 main/main-10 profiles ● Closed captions according to 608/708
AVC	● Up to 1080p50/59.94/60 AVC interlaced or progressive output to TS, HLS, flash, HDS, HSS, and MPEG-DASH ● H.264 baseline, main, and high profiles ● Closed captions according to 608/708
VC-1	● Up to 1080i25/29.97 or 720p50/59.94 interlaced or progressive output to smooth streaming to Microsoft Internet Information Services (IIS) server ● VC-1: simple, main, and advanced profiles ● Windows Media 9 video: simple and main profiles ● Windows Media audio (WMA) and WMA Professional ● Closed captions according to 608/708
Audio	● AAC audio (low complexity, HE-AAC v1, and HE-AAC v2) output to TS, HLS, flash, HDS, HSS, and MPEG-DASH ● AC-3 pass-through (can be 2.0 or 5.1): output to TS ● DD encoding, DD+ encoding, or DD to DD+ transcoding, all in either 2.0 or 5.1: output to TS: option
Output Formats	
MPEG-2 transport stream	● Multicast streaming ● Standard or adaptive transport stream ● Ability to start or stop archive while encoder is running
MPEG DASH	● MPEG-DASH (ISO-BMFF) ● Multiple languages ● Teletext subtitles formatted to Web Video Text Tracks (WebVTT) or SMPTE-TT: from teletext PIDs, VBI (SD-SDI), or OP47 (HD-SDI)
Apple HLS	● Full support for Apple HLS, including WebVTT, PlayReady, and timed metadata ● Integrated iPhone segmenter: streams transport-stream segments directly to web server ● Multiple languages ● Teletext subtitles transformed to WebVTT: from teletext PIDs, VBI (SD-SDI), or OP47 (HD-SDI)
HSS	● HTTP smooth streaming to IIS server ● Teletext subtitles transformed to TTML/DFXP: from teletext PIDs, VBI (SD-SDI), or OP47 (HD-SDI)
Flash streaming	● HTTP dynamic streaming (HDS) to flash media server: option ● Real-Time Messaging Protocol (RTMP) stream over TCP to flash media server
Third-Generation Partnership Project (3GPP)	● H264/AVC baseline with AAC audio (low complexity, HE-AAC v1, and HE-AAC v2) ● H.263 profile 0,3; levels 10, 20, 30, and 45 with AMR-NB audio ● Real-Time Transport Protocol (RTP): either controlled through Real-Time Streaming Protocol (RTSP) or as raw RTP output

Baseband Video Processing	
	● Scaling ● Cropping ● Advanced deinterlacing ● Inverse telecine ● Adaptive image filtering ● Slate insertion ● Logo insertion ● DVB subtitles (bitmapped) or SCTE-27 subtitles can optionally be burned into the baseband video
Metadata Processing	
	● Automated ad insertion with playlists generated by playout servers ● Support for slate insertion to remove broadcast ads ● Ability to remonetize video with Internet ads for browser, mobile, and set-top box ● Ad avail blanking and blackout capability based on either SCTE-104 on SDI or SCTE-35 on IP ● Nielsen ID3 support ● SCTE-35 and SCTE-104 support ● Support for auxiliary data (EBIF, KLV, V-Chip, and CGMS-A)
Encryption and DRM	
	● Comprehensive encryption and digital rights management (DRM) support
Redundancy	
	● An N:M redundancy with either IP or with SDI (SD or HD) including SDI-router control is supported by the Cisco Video Service Manager (VSM)
Certifications	
Safety	● UL 60950-1: No. 21CFR1040 Second Edition ● CAN/CSA: C22.2 no. 60950-1 Second Edition ● IEC 60950-1 Second Edition ● EN 60950-1 Second Edition ● ASINZS 60950-1 ● GB4943 2001
EMC	● FCC (CFR 47, Part 15) Class A ● AS/NZS CISPR22 Class A ● CISPR2 2 Class A ● EN55022 Class A ● ICES003 Class A ● VCCI Class A ● EN61000-3-2 ● EN61000-3-3 ● KN22 Class A ● CNS 13438 Class A
Physical	

Physical and power	● Dimensions (H x W x D) 1.7 x 16.9 x 31 in. (4.32 x 43 x 78.7 cm) (1 rack unit [1RU])
	● 770W power supply (optional redundant power supply available)
	● AC input voltage range 90 to 264 VAC (self-ranging, 100 to 240 VAC nominal)
	● AC input frequency range: 47 to 63 Hz (single phase, 50 to 60 Hz nominal)
	  ◦ AC line input current (typical) 5.50A at 100 VAC/2.64A at 208 VAC
	  ◦ AC line input current (maximum 100% CPU load) 6.16A at 100 VAC/2.96A at 208 VAC
	● Connectivity: two 1-Gbps Ethernet ports (10/100/1000BASE-T Ethernet)

Temperature	● Operating temperature: 41 to 95°F (5 to 35°C) ● Nonoperating (storage): -40 to 149°F (-40 to 65°C)
Humidity	● Operating: 10 to 90% noncondensing

Control	
	● Remote web-based GUI ● Customizable encoding templates ● Local user interface ● Simple Network Management Protocol Version 2 (SNMPv2) for traps ● XML Simple Object Access Protocol (SOAP) messaging service ● Front-panel connector: one KVM console connector (supplies 2 USB, 1 VGA, and 1 serial connector) ● Standard connectivity: one 10/100/1000BASE-T Ethernet or two 1-Gb Ethernet ports

Figure 1 shows a rear view of the Cisco AnyRes Live 9400 with a quad GbE card mounted in the mLOM slot.

Figure 1.   Rear View of Cisco AnyRes Live 9400 with Quad GbE Card Mounted in mLOM Slot
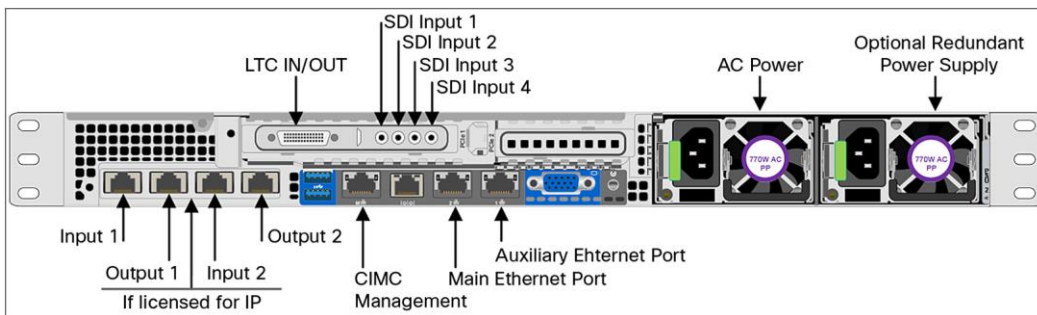
The Cisco Integrated Management Controller interface is a standard feature on all Cisco AnyRes Live encoders.

Warranty Information

Find warranty information on Cisco.com at the Product Warranties page.

Ordering Information

To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Table 2 provides ordering information.

Table 2.   Ordering Information

Product Name	Part Number
Cisco AnyRes Live 9400 Platform Gen4 The 9400 can be configured in 3 different configuration: ● With SDI only, and the option to software upgrade to an IP input for transcoding ● With SDI as well as IP input enabled from factory ● With IP input/output, i.e. without the SDI input capture card These options are configurable as part of the online ordering process.	SPN-9400-K9
The Cisco AnyRes Live 9400 comes standard with: ● 2 multicore Intel Xeon processor E5-2600 v3 series CPUs ● 64 GB RAM ● Dual hot-pluggable, sled-mounted, 600 GB HDD ● One power supply ● Quad 1GbE RJ45 in the mLOM slot	
Optionally, the Cisco AnyRes Live 9400 can be ordered with: ● IP input: as an option on top of SDI ● Broadcast decoder input, supporting AVC 4:2:2 8/10-bit SD/HD/FHD ● HEVC for ABR/SD/HD/FHD applications ● HTTP dynamic streaming (HDS) to flash media server ● DD or DD plus encoding, or DD to DD plus transcoding (1/stereo)	LSPN-IP LSPN-DEC-422 LSPN-HEVC LSPN-HDS LSPN-DD-DDP-XC

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For More Information

For more information about the Cisco AnyRes Live 9400, contact your local account representative