

Cisco AnyRes Live 9500 UHD Encoder



Product Overview

The Cisco® AnyRes Live 9500 UHD Encoder represents a new generation of the Cisco AnyRes Live Family, with support for advanced encoding of live and ultra-high-definition (UHD) 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 9500 UHD Encoder delivers the highest-quality encoding using full-frame High Efficiency Video Codec (HEVC) encoding technology developed by Cisco.

The Cisco AnyRes Live 9500 UHD Encoder is a fully optimized solution on the Cisco Unified Computing System™ (Cisco UCS®) server platform including input interfacing for UHD baseband video.

Dual Cisco AnyRes Live 9500 Encoders support resolutions for high-motion content as live sports and other live events being transmitted with frames rates up to 60 frames per second (fps). In addition, a single Cisco AnyRes Live 9500 supports encoding of more theatrical-related material with frame rates of 24, 25, 29.97, or 30 fps. Combined with this wide range of frame rates, the Cisco AnyRes Live 9500 supports video resolutions of both 8 and 10 bits.

With its easy-to-use interface, Cisco AnyRes Live 9500 lets you either configure encoding of your UHD encoding or turn an HD-video source 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 UHD video to televisions.

Product Specifications

Table 1 lists specifications for the Cisco AnyRes Live 9500 UHD Encoder.

Table 1. Product Specifications

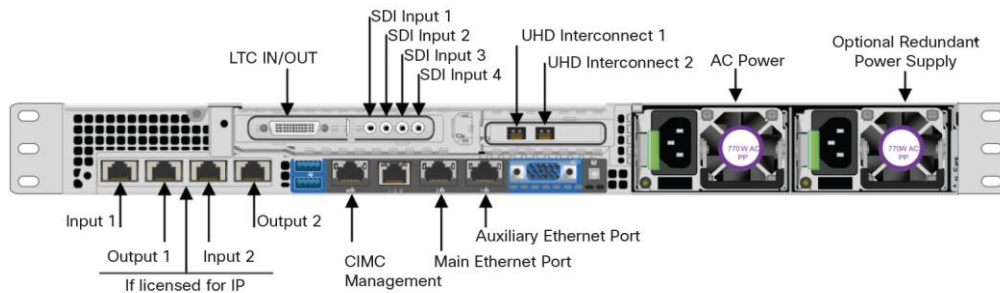
Inputs	
Physical SDI interface	<ul style="list-style-type: none"> • Input interfaces: 4 x DIN 1.0/2.3 BNC, 75-ohm, break-out cable to standard BNC included • Input SDI format: SMPTE 424M Level-A or Level-B, 1080p (up to 60 fps) • Input HD-SDI format: SMPTE 292M, 1080i or 720p (up to 60 fps) • Input: SD-SDI format: SMPTE 259, 480i/29.97 or 576i/25 fps

Ultra high definition	<ul style="list-style-type: none"> • UHD 3840 x 2160p • Frame rates with single 9500: 24, 25, 29.97, and 30 fps • Frame rates with dual 9500s: In addition to the single 9500: 50, 59.94, and 60 fps
High definition	<ul style="list-style-type: none"> • HD 1920 x 1080, or 1280 x 720 • Frame rates with single 9500: 24, 25, 29.97, 30, 50, 59.94, and 60 fps
Standard definition	<ul style="list-style-type: none"> • SD 720 x 480i/29.97 or 720 x 576i/25
Audio	<ul style="list-style-type: none"> • Embedded audio: SMPTE 299M, up to four stereo pairs – PCM or precompressed
IP interface: option	<ul style="list-style-type: none"> • Input interfaces: quad GbE IP card in the mLOM (modular LAN-on-motherboard) slot
Video codecs	<ul style="list-style-type: none"> • AVC or MPEG2 – 4:2:0 <ul style="list-style-type: none"> ◦ SD, HD, and full HD (1920 x 1080p50/59.94) • AVC – 4:2:2, 8- or 10-bit: option: <ul style="list-style-type: none"> ◦ SD, HD, and full HD (1920 x 1080p50/59.94)
Audio formats	<ul style="list-style-type: none"> • MPEG1-LII, AAC, AC3, and SMPTE 302M(PCM)
Transport mode	<ul style="list-style-type: none"> • MPEG2-Transport Stream (MPEG2-TS) over User Datagram Protocol (UDP)
Output Codecs	
HEVC: option	<ul style="list-style-type: none"> • Up to 4Kp50/5994/60 (UHD) 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Multicast streaming • Standard or adaptive transport stream • Ability to start or stop archive while encoder is running
MPEG DASH	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • HTTP smooth streaming to IIS server • Teletext subtitles transformed to TTML/DFXP – from Teletext PIDs, VBI (SD-SDI), or OP47 (HD-SDI)
Flash streaming	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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	
	<ul style="list-style-type: none"> • Scaling • Cropping • Advanced de-interlacing • Inverse telecine • Adaptive image filtering • Slate insertion • Logo insertion • DVB subtitles (bitmapped) or SCTE-27 subtitles can optionally be burned in to the baseband video
Metadata Processing	
	<ul style="list-style-type: none"> • 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 black-out 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	
	<ul style="list-style-type: none"> • Comprehensive encryption and digital rights management (DRM) support
Redundancy	
	<ul style="list-style-type: none"> • A 1:1 redundancy scheme is supported through the use of the Cisco DCM D9901 or DCM D9902 Digital Content Manager equipped with a Gigabit Ethernet card On the DCM the redundancy is achieved through a very robust service backup mechanism that can be configured with various triggers. For further information please consult the DCM configuration guide. • An N:M redundancy with either IP (up to full HD) or with SDI (up to UHD) including SDI-router control is supported by the Cisco Video Service Manager (VSM)
Certifications	
Safety	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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) <ul style="list-style-type: none"> ◦ 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	<ul style="list-style-type: none"> • Operating temperature: 41 to 95°F (5 to 35°C) • Nonoperating (storage): -40 to 149°F (-40 to 65°C)
Humidity	<ul style="list-style-type: none"> • Operating: 10 to 90% noncondensing

Control	
	<ul style="list-style-type: none"> • 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. Rear View of Cisco AnyRes Live 9500 – with a quad GbE card mounted in the mLOM slot.



Cisco Integrated Management Controller (CIMC) 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. Ordering Information

Product Name	Part Number
Cisco AnyRes Live 9500 Platform Gen4 KONA4, 4 HD-SDI The Cisco AnyRes Live 9500 comes standard with: <ul style="list-style-type: none"> • 2 multicore Intel Xeon processor E5-2600 v3 series CPUs • 64GB RAM • Dual hot pluggable, sled mounted, 600GB HDD • Dual port 10GBase-T adapter • One Power Supply • Quad 1GbE RJ45 in the mLOM-slot • One Power Supply 	SPN-9500-K9
Optionally, the user can select to order the Cisco AnyRes Live 9500 equipped with extra HDD for archive purposes Optionally the Cisco AnyRes Live 9500 can be ordered with: <ul style="list-style-type: none"> • IP Input • Broadcast decoder input, supporting AVC 4:2:2 8/10bit SD/HD/FHD • UHD Option - includes HEVC and support for all lower resolutions • 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-UHD LSPN-HEVC LSPN-HDS LSPN-DD-DDP-XC

Cisco Capital

Financing to Help You Achieve Your Objectives

Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. [Learn more.](#)

For More Information

For more information about the Cisco AnyRes Live 9500 UHD Encoder contact your local account representative.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)