

JPEG XS FAQ

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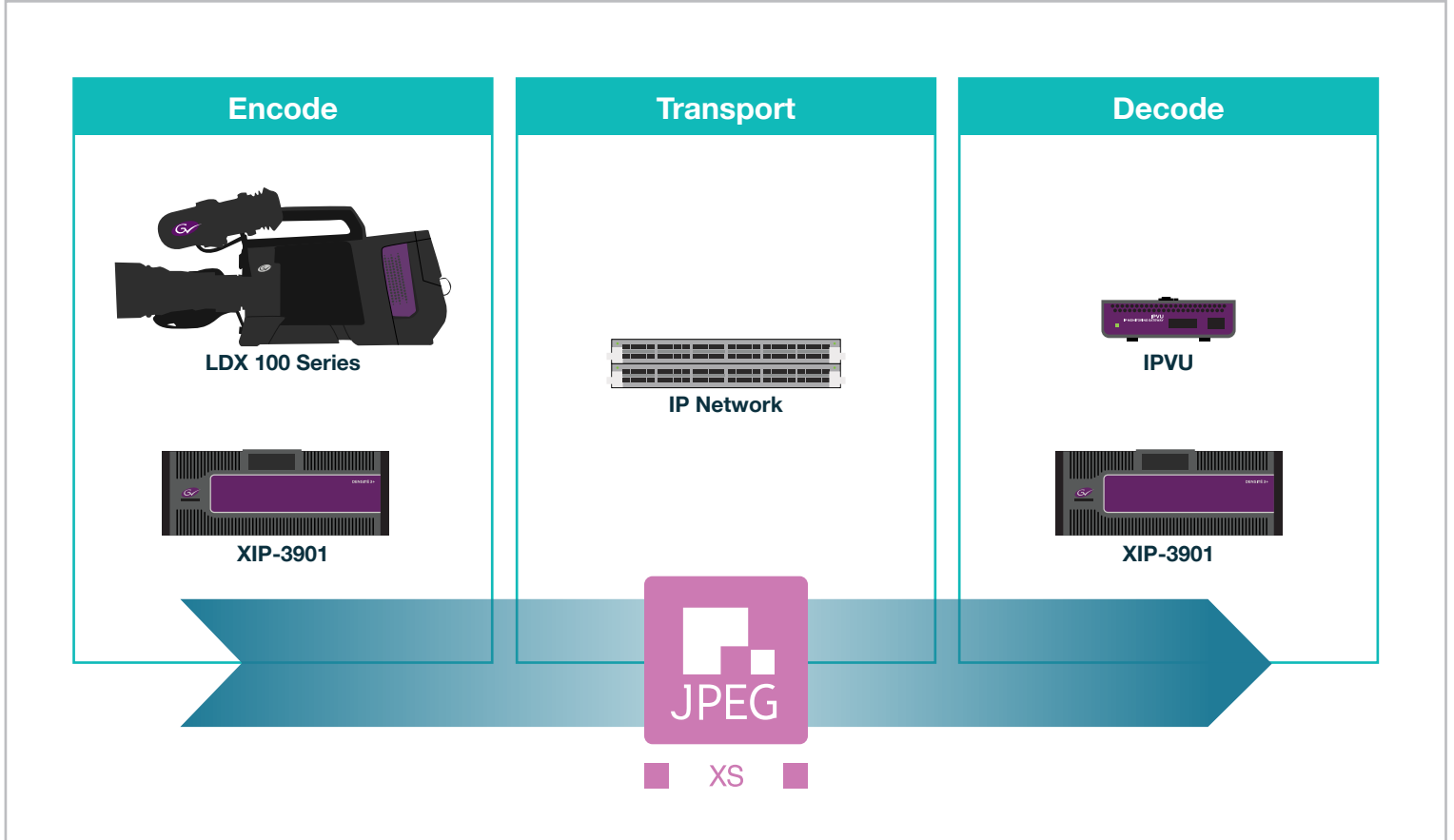
1. Why do we need a new compression format?

As the world meets the simultaneous challenges of producing in higher resolutions, such as UHD, higher frame rates and more simultaneous streams — while also producing more content remotely over IP networks — traditional codecs primarily designed for improving compression ratios with quality and latency being secondary are no longer the best solutions.

The primary goal of JPEG XS was to create a compression format that could reliably replace uncompressed video without sacrificing not only quality, but also minimizing encode and decode latency, plus reducing the complexity of implementation. This simplifies integration into existing broadcast equipment, seamlessly replacing uncompressed video at reduced bandwidth.

2. What applications are JPEG XS best suited for?

JPEG XS can be used anywhere uncompressed video over IP is used today. The low latency nature of JPEG XS encoding and decoding lends itself particularly well to live production applications. The ability to compress video to a tenth of its size without compromising quality means that broadcasters can save on bandwidth costs, particularly when many live feeds need to be sent to a central location for production. In any environment where production is being performed over IP networks in a distributed way, JPEG XS allows technical directors, operators and production staff of all kinds to be located anywhere without worrying about delays. At 10:1 compression, video quality is visually lossless and latency is negligible.



3. Is JPEG XS equipment from multiple vendors compatible?

Grass Valley has implemented the ISO/IEC 21122-1 standard provided by IntoPix using high 4:2:2 and a 10-bit profile. Transport is done using SMPTE standard ST 2110-22. By conforming to industry standards, Grass Valley ensures interoperability of its JPEG XS solutions with multiple vendors when they conform to the standards.

4. What is unique about Grass Valley's JPEG XS implementation?

Grass Valley has implemented the newest 10-bit JPEG XS codec from intoPIX based on the open standard described above in several of their products. With its wide range of products and state-of-the-art orchestration platform, GV Orbit, Grass Valley is uniquely positioned to help broadcasters create complete workflows, from camera to monitor, which enable the full savings potential of high-quality production using compressed video in a distributed environment.

5. What products has Grass Valley already added JPEG XS capabilities to?

Grass Valley has already released a range of products with JPEG XS capabilities:

- **LDX 100 Series cameras:** LDX 100 Series NativeIP cameras (LDX 100 & LDX 150) each use three new 2/3-inch imagers (the Titan in the LDX 100 and the Xenios in the LDX 150) to capture Ultra High Definition (UHD) High Dynamic Range (HDR) images at 1X and 3X high speed for exquisite slow-motion playback. The JPEG XS license creates the compressed video signal within the camera when running in NativeIP mode, saving external equipment. Extremely beneficial for remote productions to save significant bandwidth, both single-speed HD and UHD signals can be compressed.
- **XIP-3901-JPEG-XS:** The Densité 3+ XIP-3901 from Grass Valley is an agile processing platform that focuses on high-quality live production for 4K UHD, 3G 1080p, HD and HDR. The JPEG XS application for this platform enables eight channels of 3G/HD or four channels of UHD encoding and decoding at user-selectable compression ratios from 5:1 to 36:1.
- **IPVU:** The IPVU is a compact dual-channel IP-to-HDMI converter that's perfect for displaying IP sources and a multiviewer's IP outputs on HD and 4K UHD HDMI displays. The IPVU offers an integrated IP-to-HDMI gateway that can be installed on a rack shelf or mounted behind the display. The JPEG XS license enables JPEG XS decoding from SMPTE 2110-22 streams on both HDMI outputs.