

Selenio™ Network Processor

UHD and HDR Application Note



Looking for a flexible approach to deliver UHD and HDR?
Imagine Communications has you covered.

The Challenge:

The consumption of Ultra High Definition (UHD) and High Dynamic Range (HDR) by viewers has increased the demand on today's content producers. UHD and HDR are now firmly entrenched in the viewer's mind. Media producers are coming under pressure to compete with UHD and HDR services on cable, satellite, and streaming devices.

The challenge for the media production and delivery industry is the processing, manipulation, and delivery of the UHD signal over the various stages of the broadcast delivery chain. Cameras producing UHD and HDR content have been on the market for many years; likewise, consumer display devices are more and more compliant to these technologies. The biggest challenge to a UHD infrastructure is maintaining a workflow that is flexible, expandable, and adaptable to changing project requirements.

The Solution:

Imagine Communications is committed to UHD, HDR, and SMPTE ST 2110, offering flexible approaches for media production and delivery. Our industry-proven Selenio Network Processor (SNP) integrates HD and UHD, including HDR processing — providing flexible capabilities for today's critical customer applications. Utilizing SMPTE ST 2110, you can seamlessly produce content from glass to glass and preserve the UHD and HDR attributes onto the viewers' screens.

Our focus and approach are aligned to helping customers provide UHD and HDR the right way. This means providing media production organizations with the tools to deliver UHD and HDR content more efficiently across more platforms as a top priority. Encapsulating and de-encapsulating video signals through a multitude of gear presents many opportunities for production errors. The SNP reduces errors by getting everything done in a single device.



Features and Benefits:

SNP's implementation of UHD and HDR produces up to seven signal formats from a single input.* User configurations on the SNP give complete flexibility. Built to support SMPTE ST 2110, SNP enables switching and routing as one signal and has the full vocabulary for describing the video signal. Ingesting a video signal into the SNP, via SDI or SMPTE ST 2110, starts with breaking down the video signal to its most basic level. This allows the end user to control all possible color corrections.

Selenio Network Processor Capabilities

In / Out Standards	Signal Formats	HDR Formats
480i/ 59.94* ✓	HD-SDI ✓	SDR-709 ✓
525/59.94* ✓	3G - SDI ✓	SDR-601 ✓
720p59.94 ✓	2SI-HDI ✓	SDR-2020 ✓
720p50 ✓	12G-SDI ✓	HLG-2100 ✓
1080p29.97 ✓	2110-20 ✓	PQ-2100 ✓
1080p59.94 ✓	2022-6 ✓	SLog3-2020 ✓
1080p50 ✓		Custom LUT ✓
2160p59.94 ✓		
2160p50 ✓		

* IP Gateway Encoding and Decoding only

SNP also provides up/down/cross conversion between HD and Ultra HD in HLG, PQ, and S-Log3 through its own sophisticated color processing pipeline with dozens of user adjustments. In productions that require matching to a specific LUT, the SNP will allow customer-uploaded LUTs, including dynamic adjustments in tandem with the LUT and dynamic contextual switching between the LUT and the pipeline, choosing the appropriate conversion on the fly.



Ready for the Future:

SMPTE ST 2110 is the right approach for UHD and HDR: It harmonizes signals from DCI, Post, Film, and, of course, television; it's engineer friendly; and it can grow with us as UHD and HDR continue to evolve.

Broadcasters and media production companies across the globe are embracing next-generation technologies and architectures, outfitting their facilities and production vehicles with IP-based solutions that usher in new levels of cost efficiency and agility, as well as ease current and future upgrades to higher-quality services. Imagine Communications and the ground-breaking Selenio Network Processor are at the center of this activity.

*To learn more on the various UHD and HDR configurations, contact your Imagine Communications representative.