Selenio™ Network Processor Conversion Application Note

How Selenio™ Network Processor's UHD/HD/SD SDI Conversion platform with HDR processing can solve today's challenges with an eye on the future.

The Challenge:

In today's broadcast workflows, content is delivered in more resolutions, frame rates and formats than ever before. The ability to deliver content in UHD, HD and SD formats is expected today, ensuring each delivery chain gets the strongest picture quality possible, maximizing customers' bottom line. In addition to traditional baseband video and audio processing, modern workflows now carry Standard Dynamic Range (SDR) and High Dynamic Range (HDR) color space information, which also needs careful processing and conversion. For years we only had SD, HD, 3G and frame rate conversions. Now mix in the various UHD resolutions, frame rates and HDR combinations and we have a new level of color space and frame rate complexity and possible combinations. How can you be sure your content is getting the treatment it deserves with the flexibility required?

The Solution:

The Selenio Network Processor (SNP) Conversion platform from Imagine Communications has the capability to ingest any SDI format, process it and output with unsurpassed picture quality. The SNP Conversion performs perfectly as a simple SDI synchronizer and conversion appliance and scales elegantly to large facility-level conversion applications.

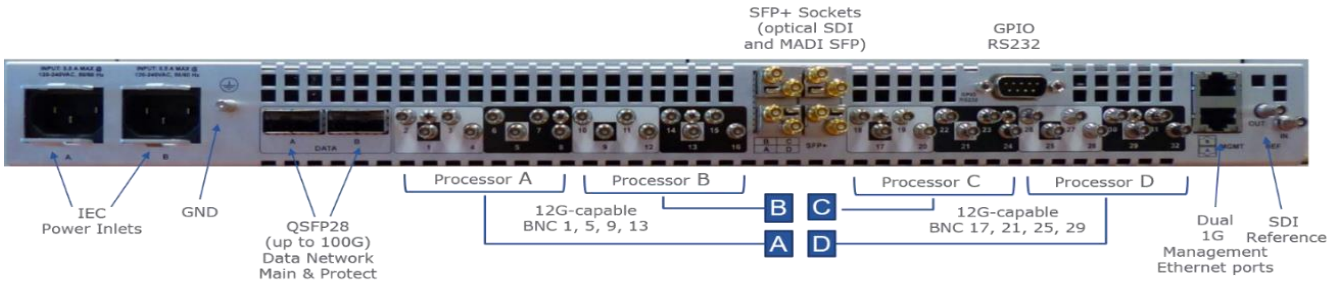
This powerful platform with an ever-growing set of capabilities is cost effective and feature rich. The 1RU Selenio Network Processor is a full-featured video and audio processor & synchronizer for up to 8 UHD services (12G or 4 Wire 2SI/SQD) or up to 16 3G, HD or SD services, or mixed. For SDR/HDR conversion applications, the SNP supports SDR-709, SDR-2020, HLG-2100, PQ-2100, and SLOG3, including custom setting adjustments for Artistic or Director Intent. The SNP's SDR/HDR processing includes outputting multiple versions for simultaneous viewing of the same content on multiple monitor types.

1 866 4 Imagine (1-866-446-2446)
email insidesales@imaginecommunications.com

6100 Tennyson Pkwy, Suite 130, Plano, TX, 75024 USA

If needed, custom LUTs (Lookup Tables) can be imported to the SNP so you can match conversion and processing settings to the production conditions of the day.

All SDI services are also simultaneously available via IP (SMPTE ST 2110 and ST 2022) without compromise to the SNP's processing power. Two QSFP cages provide redundant 100G interfaces to uncompressed IP networks. With qualified QSFPs from leading IP switch manufacturers as available options for SNP, SMPTE ST 2022 and SMPTE ST 2110 workflows are achievable without interruption to existing SDI functionality.



Features and Benefits:

- SNP Conversion is a full-featured conversion platform that scales well due to its service count density and high amount of processing power.
- Inputs and outputs can be any resolution, any format, including processing of SDR & HDR.
- Automatic signal detection or manual control is available to standardize your signal processing.
- Unmatched image processing preserves picture quality reliably and affordably. There are hundreds of custom settings that can be utilized and manipulated independently for each service.
- The low-latency, high-quality conversion is ideal for live production and air chain workflows.
- Each video service can process up to 16 embedded audio streams with audio delay / shuffle / gain / etc., including a mix of audio channels/streams across other video services in the same device.
- Optional Audio Processing for Loudness Control, Upmix and Downmix
- ST 2110 Ready: The SNP is well suited for SDI applications, and when you are ready to move to ST 2110 — so is the SNP. IP is inherent in the design to simplify your migration to ST 2010 workflows.

Ready for the Future:

The SNP Conversion includes a strong return on investment. The SNP can add other optional features like multiviewing, MADI support and HD Proxy generation, plus can be a managed source and destination within Imagine Communications' Magellan™ SDN Orchestrator ecosystem. This allows the SNP to become part of more complex workflows such as facility-level signal normalization applications and live production applications. This integration not only provides frame accurate "destination source take" routing between the SDI and IP worlds, but more importantly provides parametric control — enabling production changes to be made easily on the fly.

The SNP Conversion can be expanded to receive and transmit SMPTE ST 2022 and ST 2110 services via dual 100G IP QSFPs that are available from leading switch providers. This allows the SNP to not only perform required conversions, but also serve as a best-in-class SDI / IP Gateway. The result is a completely future-proofed customer workflow for a seamless transition to an IP infrastructure.