SEL-4J2KE1-EOS; SEL-4J2KD1-EOS

Multichannel JPEG2000 Compression Over IP

The new Selenio™ JPEG2000 module is a multichannel encoder/decoder solution, offering real-time, high-quality JPEG2000 compression over IP.A single module supports up to four HD/SD-SDI channels or two 3G-SDI channels.

Delivering superior interoperability with many third-party JPEG2000 solution vendors, this module harnesses the power of the Selenio media convergence platform, which offers higher density, enhanced redundancy schemes, an easy-to-use interface and low total cost of ownership. The platform's flexible, expandable design enables customers to mix and match JPEG2000 and H.264/MPEG-2 functionality, as well as other Selenio processing capabilities, in the same frame, for a future-proof solution.

Markets/Applications

- Professional broadcast contribution (contribution from event venue to studio/network)
- Studio-to-studio media exchange (production contribution)
- In-house signal distribution and routing (dynamic IP-based tie-lines)
- Live event coverage/fiber-based news and remote studio productions
- Real-time transport of 3G/HD/SD over IP

Features

- Multichannel, real-time JPEG2000 compression in a single-slot Selenio module
- Support for 10 bits/4:2:2, standard latency, up to 4 HD/SD channels or 2 3G channels, visually lossless encoding and decoding (including genlock)
- 8 HD-BNC ports, plus internal SDI links to/from other Selenio products
- Dual-network interfaces supporting 1GigE SFP (electrical/fiber)
- Software key-upgradeable between the different encoder/decoder channel options
- Multichannel 3G/HD/SD-SDI video encapsulation using SMPTE 2022-2
- Standards-based FEC, supporting SMPTE 2022-1 for protection against packet losses created by occasional network errors
- Low latency (<40 ms end-to-end) and ultra-low latency (sub-frame latency) contribution, JPEG2000 compression and encapsulation
- Support for Near/Mathematically Lossless (MLS) compression for video signals
- Configurable transport stream bit rates with automatic video rate optimization based on audio and ancillary data to be carried
- Support for DVB-ASI network interface for use in traditional video networks employing ASI multiplexing
- Support for Unicast and Multicast transmission
- Support for SMPTE 2022-7 seamless protection specification
- Support for VLAN tagging for segregation of traffic and Quality of Service differentiation via TOS
- Audio transport for up to 8 pairs (4 groups) of AES audio for

- HD/SD signals including Dolby® E and AC-3
- Dolby® E-compatible frame skip and repeat on non-PCM signals
- Transparent transport of VANC data for HD/SD signals
- Supported by Service Manager, Reservation-Based Scheduling and Management application
- Support for Selenio standard software upgrade method
- Support for Selenio audio expander module for additional AES I/O
- Support for full redundancy schemes provided in Selenio platform, N+M, N+1, 1+1 and more
- **SEL-0J2KD1-EOS:**
  - Support for reception of 4 SMPTE-2022-1/2 streams each stream being 1-213Mbps per IP input port
  - Support for SMPTE-2022-7 protection of the 4 streams using the redundant IP input
  - 4 ASI outputs from the source protected IP streams. The TS output will be unmodified from input TS
  - User selection to set up to 4 HD-BNCs to ASI output of the source TSs

Specifications

Specifications and designs are subject to change without notice

SDI- BNC VIDEO INPUTS	
Number of Inputs	Up to 8 – (bi-directional port shared with output)
Connector Type	(High-Density) HD-BNC
Standards	SMPTE 259M-C (SD), 525/625 SMPTE 292M-C (HD), 720p50/59/60, 1080i50/59/60 SMPTE 424M (3G), 1080p50/59/60 DVB-ASI
Impedance	75 ohms
Return Loss	>15 dB to clock frequency (SD) >15 dB to clock frequency (HD) >15 dB to 1.5 GHz and >10 dB to 3 GHz (3G)
Signal Level	800 mV ±10%
Max input cable	>250 m for Belden 1694A co-axial cable (SD) >150 m for Belden 1694A co-axial cable (HD) >100 m for Belden 1694A co-axial cable (3G) (Adaptive cable equalization)

SDI- DIFFERENTIAL VIDEO INPUTS (FROM VIDEO EXPANDER CARD)	
Number of Inputs	3
Connector Type	Differential signal
Standards	SMPTE 259M-C (SD), 525/625 SMPTE 292M-C (HD), 720p50/59/60, 1080i50/59/60 SMPTE 424M (3G), 1080p50/59/60, DVB-ASI
Impedance	100 ohms
Signal Level	800 mV ±30%
DC Offset	PCML standard
Rise and Fall times	<155 ps
Overshoot/Undershoot	<25%
Jitter	<0.05UI pk-pk random jitter <0.2UI deterministic jitter

SDI- BNC VIDEO OUTPUTS	
Number of outputs	Up to 8 – (bi-directional port shared with output)
Connector Type	(High-Density) HD-BNC
Standards	SMPTE 259M-C (SD), 525/625 SMPTE 292M-C (HD), 720p50/59/60, 1080i50/59/60 SMPTE 424M (3G), 1080p50/59/60. DVB-ASI
Impedance	75 ohms
Return Loss	>15 dB to clock frequency (SD) >15 dB to clock frequency (HD) >15 dB to 1.5 GHz >10 dB to 3 GHz (3G)
Signal Level	800 mV ±10%
DC Offset	0 V ±0.5 V
Rise and Fall times	0.75 ns to 1.5 ns (SD)<270 ps (HD) <135 ps (3G)
Overshoot/Undershoot	<10%
Jitter	<0.2UI pk-pk (>10 Hz) (SD) <1UI (673ps) peak-to-peak of timing jitter (>10 Hz) (HD) <0.2UI (135ps) pk-pk of alignment jitter for (>100 kHz) (HD) <2UI (673 ps) pk-pk of timing jitter (>10 Hz) (3G) <0.3UI (101 ps) pk-pk of alignment jitter (>100 kHz) (3G)

SDI- DIFFERENTIAL VIDEO OUTPUTS (TO VIDEO EXPANDER CARD)	
Number of outputs	3
Connector Type	Differential signal
Standards	SMPTE 259M-C (SD), 525/625 SMPTE 292M-C (HD), 720p50/59/60, 1080i50/59/60 SMPTE 424M (3G), 1080p50/59/60 DVB-ASI
Impedance	100 ohms
Signal Level	800 mV ±30%
DC Offset	CML standard
Rise and Fall times	<155 ps
Overshoot/Undershoot	<25%
Jitter	<0.05UI pk-pk random jitter <0.2UI deterministic jitter

Ordering Information

ENCODERS	
SEL-1J2KE1-EOS	JPEG2000 compression encoder, includes 1x HD/SD channel J2K encoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)
SEL-2J2KE1-EOS	JPEG2000 compression encoder, includes 2x HD/SD channels or 1x 3G channel J2K encoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)
SEL-4J2KE1-EOS	JPEG2000 compression encoder, includes 4x HD/SD channels or 2x 3G channels J2K encoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)

DECODERS	
SEL-1J2KD1-EOS	JPEG2000 compression decoder, includes 1x HD/SD channel J2K decoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)
SEL-2J2KD1-EOS	JPEG2000 compression decoder, includes 2x HD/SD channels or 1x 3G channel J2K decoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)
SEL-4J2KD1-EOS	JPEG2000 compression decoder, includes 4x HD/SD channels or 2x 3G channels J2K decoding, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)
SEL-0J2KD1-EOS	JPEG2000 compression Decoder module, support for 4 ASI outputs without any J2K Decoding licenses. 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options and J2K Decoding licenses separately)

DECODER GENLOCK	
SEL-2J2GL1-EOS	JPEG2000 compression decoder with genlock, includes 2x HD/SD channels or 1x 3G channel J2K decoding with genlock, a single back module with 8x HD-BNC connectors for SDI/ASI signals and dual SFP electrical/optical support for 1GbE transport over IP (order SFP options separately)

ENCODER OPTIONS	
SELOPT-SK-J2KE-1T2	Software key option for JPEG2000 encoder, expansion from 1x HD/SD channel to 2x HD/SD channels or 1x 3G channel
SELOPT-SK-J2KE-1T4	Software key option for JPEG2000 encoder, expansion from 1x HD/SD channel to 4x HD/SD channels or 2x 3G channels
SELOPT-SK-J2KE-2T4	Software key option for JPEG2000 encoder, expansion from 2x HD/SD channels or 1x 3G channel to 4x HD/SD channels or 2x 3G channels

DECODER OPTIONS	
SELOPT-SK-J2KD-1T2	Software key option for JPEG2000 decoder, expansion from 1x HD/SD channel to 2x HD/SD channels or 1x 3G channel
SELOPT-SK-J2KD-1T4	Software key option for JPEG2000 decoder, expansion from 1x HD/SD channel to 4x HD/SD channels or 2x 3G channels
SELOPT-SK-J2KD-2T4	Software key option for JPEG2000 decoder, expansion from 2x HD/SD channels or 1x 3G channel to 4x HD/SD channels or 2x 3G channels

DECODER GENLOCK OPTIONS	
SELOPT-SK-J2GL-1T2	Software key option for JPEG2000 decoder with genlock, expansion from 1x HD/SD channel decoding with genlock to 2x HD/SD channels or 1x 3G channel decoding with genlock

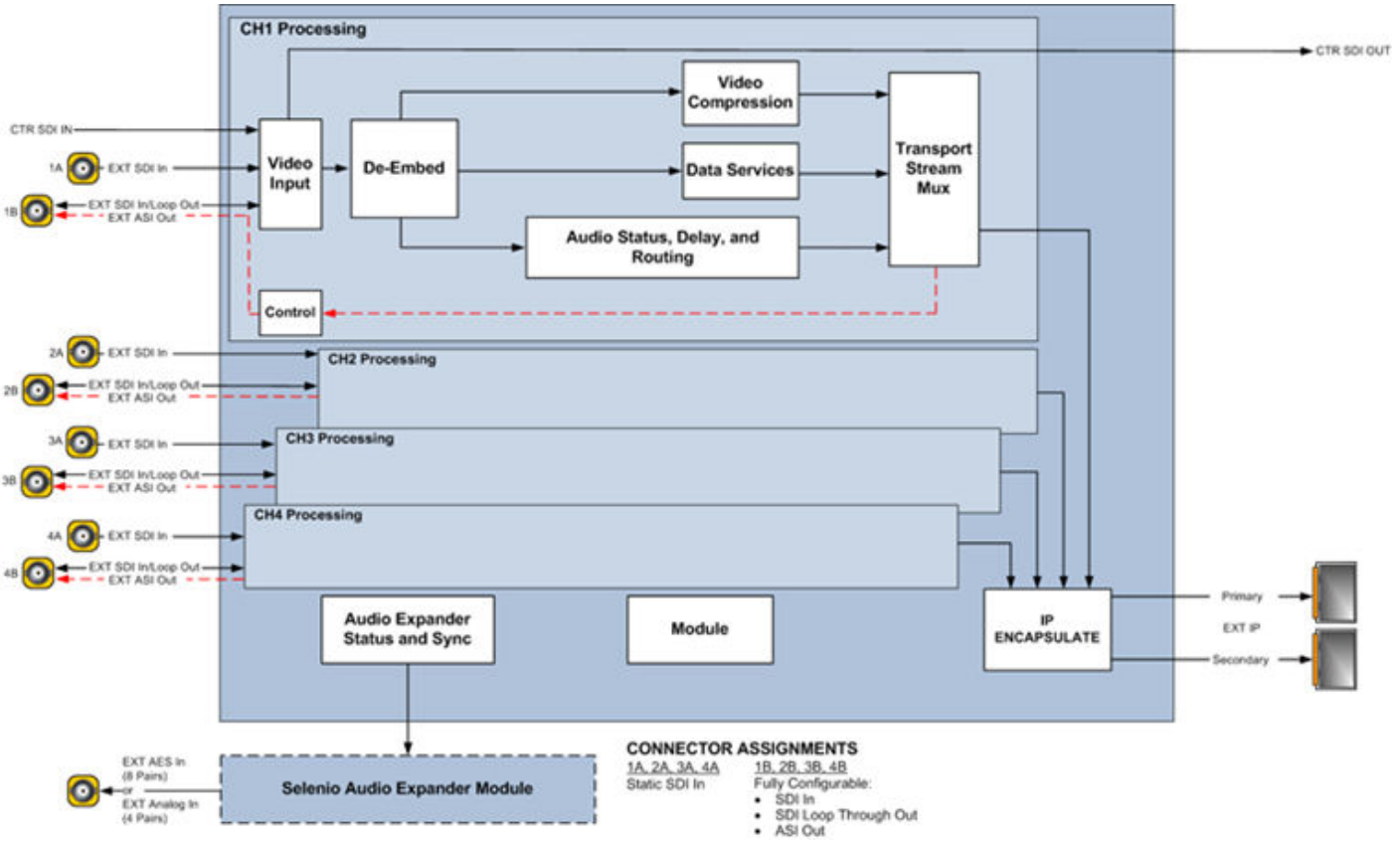
SOFTWARE UPGRADE OPTIONS	
SELOPT-SK-J2K-ULL	Software key option for JPEG2000, ultra low latency mode (can be used with any part number)
SELOPT-SK-J2K-MLS	Software key option for JPEG2000, near/true mathematically lossless, 1x HD/SD channel. Only available when the module is enabled with 4x HD/SD channels

SMALL FORM PLUGGABLE (SFP)	
SFP+TRJ45+1G	1000BASE-T copper small form pluggable (SFP) transceiver over category 5 cable. Up to 1.25 Gb/s bi-directional data links, up to 100 m
OP+SFP+TRSM+1G	1000BASE-LX fiber small form factor pluggable (SFP) transceiver. Up to 1.25 Gb/s bi-directional data links, compliant long-wavelength 1310 nm FP laser transmitter, up to 10 km
OP+SFP+TRMM+1G	1000BASE-SX fiber small form factor pluggable (SFP) transceiver. Up to 1.25 Gb/s bi-directional data links, up to 500m on 50/125 µm MMF, 220 m on 62.5/125 µm MMF

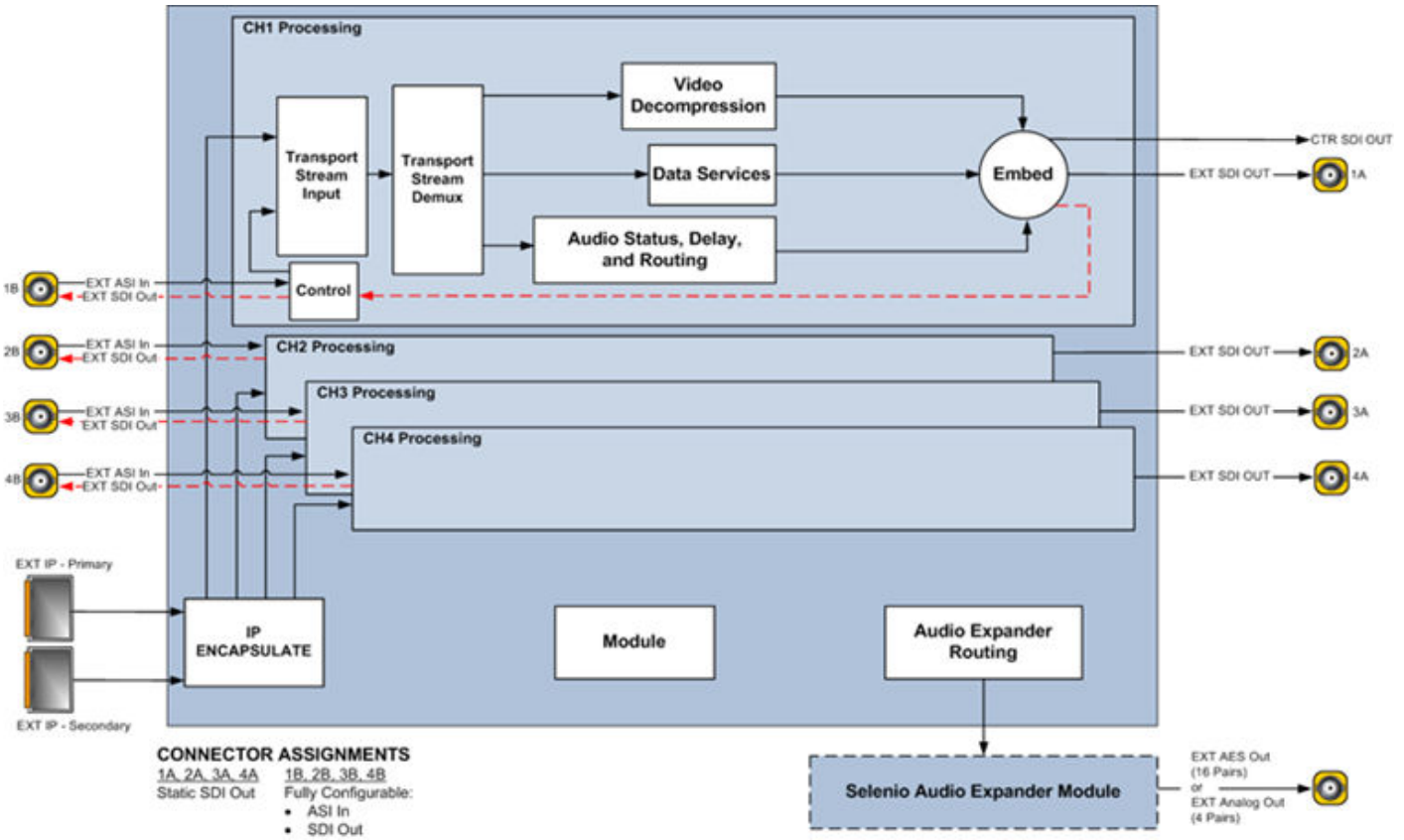
Images/Diagrams

Selenio™ MCP3

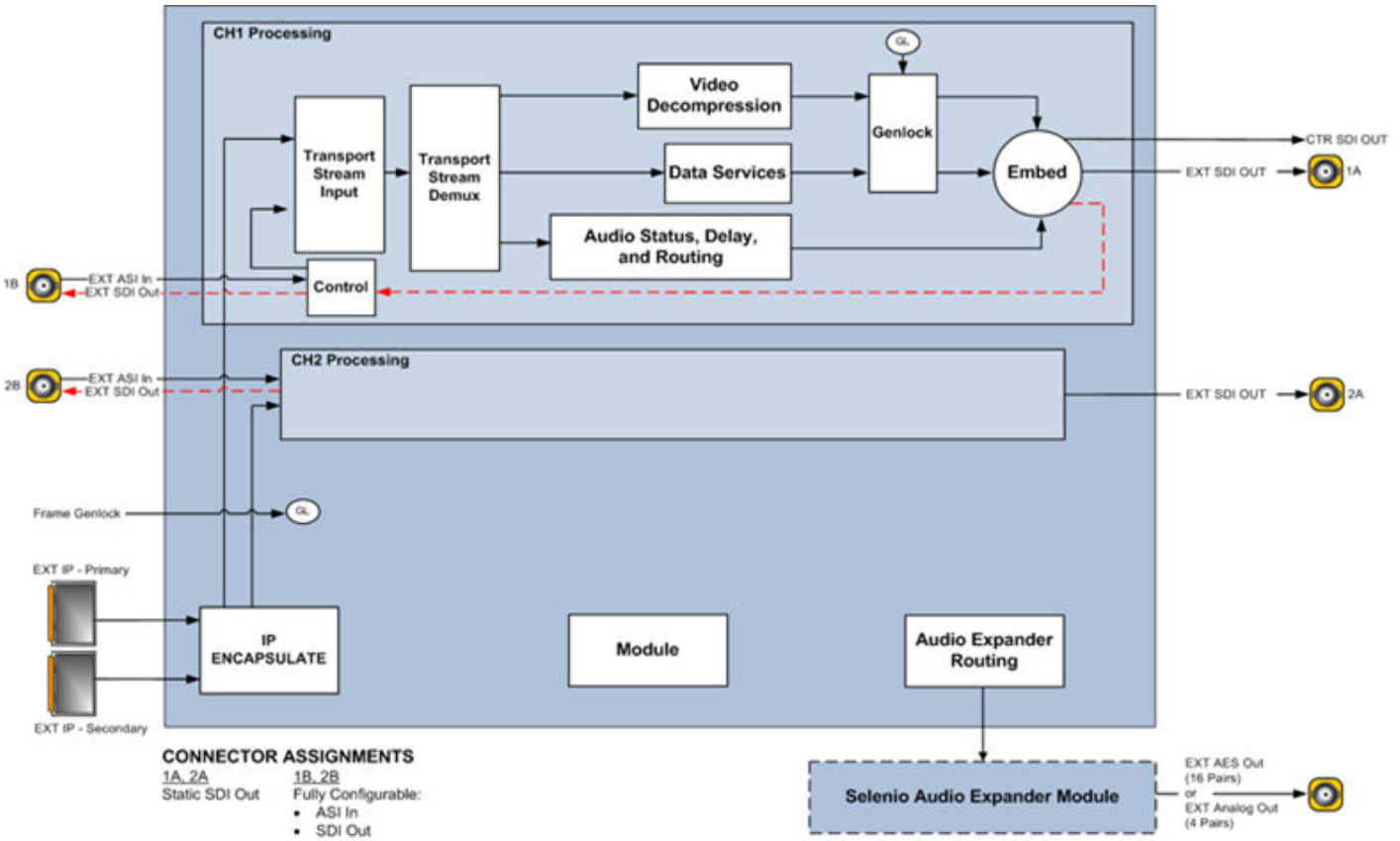
4 Channels JPEG2000 Encoder



4 Channels JPEG2000 Decoder



2 Channels Decoder Genlock



Back Module