

MPEG-2/H.264 Contribution Encoder

The Selenio SEL-1ENC2 contribution encoder works in both 8 and 10 bit modes, provides compression of a single video signal — using either the MPEG-2 or H.264 standards — and compression of up to eight streams of audio supporting a variety of common algorithms, as well as the processing of associated VBI, VANC, and Serial Data.

The SEL-1ENC2 is optimized for contribution applications, including studio-to-studio post production, stadium, surveillance, or satellite uplinks.

Features

- Video input formats supported:
 - 1080i/29.97, 1080i/25 – SMPTE 292
 - 720p/59.94, 720p/50 – SMPTE 292
 - 480i/29.97 – SMPTE 259
 - 576i/25 – SMPTE 259
- Coding formats supported:
 - H.264 High 422 Profile (4:2:2 8-bit and 10-bit) at Level 4.2
 - H.264 High 10 Profile (4:2:0 10-bit) at Level 4.2
 - AVC1-50: H.264 High 10 Intra Profile (4:2:0 10-bit) at Level 4.0 and 3.2
 - AVC1-100: H.264 High 4:2:2 Intra Profile (4:2:2 8-bit and 10-bit) at Level 4.1
 - H.264 high profile @ up to L4.2 (80 Mb/s max)
 - H.264 restricted to main profile @ up to L4.2
 - MPEG-2 422 profile @ up to high level (80 Mb/s max)
 - MPEG-2 restricted to main profile @ up to high level
- Reduced horizontal resolutions supported:
 - 1920 – 1440, 1280, 960
 - 1280 – 960, 640
 - 720 – 704, 640, 544, 528, 480, 352
- Audio input:
 - Eight HD-BNC connectors on the rear connector board for audio input
 - Embedded audio from the SDI video input
- Up to Eight audio encoder engines supported:
 - MPEG-1 Layer 2
 - Dolby® AC-3 (maximum 6 stereo supported)
 - AAC-LC (MPEG-2 and MPEG-4)
 - HE-AAC V1 (SBR) and V2 (Parametric Stereo)
 - Dolby® E
 - SMPTE 302
- VANC processing:
 - VANC passthrough (SMPTE 2038) up to 2K words per field
 - EIA-608/708 closed captions
 - AFD
 - SCTE-104 splice-point signaling for SCTE-35 insertion
 - DVITC time code
 - OP47 teletext
 - Audio metadata
- VBI processing:
 - EIA608 closed captions
 - WSS signaling
 - WST teletext
 - VITC timecode
 - AMOL-48 or AMOL-96
 - VPS data

- Data input:
 - Closed captions from IP/UDP
 - SCTE-104 over IP/TCP for SCTE-35 insertion

Specifications

Specifications and designs are subject to change without notice

1.5 GB/S HD-SDI INPUTS	
Number of Inputs	2
Standard	SMPTE 292M (1.485, 1.485/1.001 Gb/s)
Connector	HD-BNC
Impedance	75 ohms
SD-SDI INPUTS	
Connector	HD-BNC
Impedance	75 ohms
Sensitivity	<100 mV
Input Audio Sample Rate	48 kHz
ASI OUTPUTS	
Number of Outputs	2
Standard	EN 50083-9
Connector	HD-BNC
Data Rate	0 to 210 Mb/s
Output Voltage	800 mV \pm 10% pk-pk
Clock Rate	270 MHz \pm 100 ppm
Deterministic Jitter	10% pk-pk
Random Jitter	8% pk-pk
Maximum Rise and Fall time	1.2 ns (20% to 80%)
1.5 GB/S HD-SDI OUTPUTS	
Number of Outputs	2
Standard	SMPTE 292M (1.485, 1.485/1.001 Gb/s)
Connector	HD-BNC
Impedance	75 ohms
Signal Level	800 mV \pm 10%
DC Offset	0 V \pm 0.5 V
Rise and Fall Time	<270 ps (20% to 80%)
Overshoot	<10% of amplitude (all outputs terminated)
Jitter	Timing jitter: <1 UI pk-pk Alignment jitter: <0.2 UI pk-pk
SD-SDI OUTPUTS	
Number of Outputs	2
Standard	SMPTE 259M-C (270 Mb/s, 525/625 component video)
Connector	HD-BNC
Impedance	75 ohms

SD-SDI OUTPUTS	
Signal Level	800 mV ±10%
DC Offset	0 V ±0.5 V
Rise and Fall Time	400 to 1500 ps (20% to 80%)
Overshoot	<10% of amplitude (all outputs terminated)
Jitter	<0.2 UI pk-pk
ELECTRICAL	
Power Consumption	40 W maximum

Ordering Information

ENCODER HARDWARE ONLY	
SEL-1ENC2-EES	MPEG-2/H.264 contribution encoder HW including back module with HD-BNC connector SDI
SEL-1ENC2-OES	MPEG-2/H.264 contribution encoder HW including back module with SFPI/F and HD-BNC connector SDI
ENCODER MODULE TYPES	
SEL-SK-E2-C-BSC-HD	SW ENC2, MPEG-2 HD, H.264 HD high and main profile, 4:2:0, 8-bit
SEL-SK-E2-C-BSC-SD	SW ENC2, MPEG-2 SD, H.264 SD high and main profile, 4:2:0, 8-bit
SEL-SK-E2-C-PRO-HD	SW ENC2, MPEG-2 HD/SD 4:2:0 and 4:2:2 8-bit, H.264 HD/SD high and main profile, 4:2:0 and 4:2:2, up to 10-bit
SEL-SK-E2-C-PRO-SD	SW ENC2, MPEG-2 SD 4:2:0 and 4:2:2 8-bit, H.264 SD high and main profile, 4:2:0 and 4:2:2, up to 10-bit
SEL-SK-E2-C-STD-HD	SW ENC2, MPEG-2 HD/SD, H.264 HD/SD high and main profile, 4:2:0 and 4:2:2, 8-bit
SEL-SK-E2-C-STD-SD	SW ENC2, MPEG-2 SD, H.264 SD high and main profile, 4:2:0 and 4:2:2, 8-bit
ENCODER OPTIONS	
SELOPT-SK-E2-AAC	Software-keyed option for Selenio encoder to support of AAC audio on 4 stereo pairs
SELOPT-SK-E2-BISS	Software-keyed option for DVB fixed-key scrambling modes BISS-1
SELOPT-SK-E2-DDE	Software-keyed option for support of Dolby AC-3 (5.1 uses 3 existing stereo pairs of audio)
SELOPT-SK-E2-DEE	Software-keyed option for support for Dolby® on 4 stereo pairs of audio
SELOPT-SK-E2-LCL	Software keyed option for ENC2 – Support for DTS Neural Loudness Control for up to 4 stereo pairs, or one 5.1 and a stereo pair. When in use will reduce the maximum audio
SELOPT-SK-E2-DED	Software keyed option for ENC2 – Support for decoding of a single Dolby-E. When in use will reduce the maximum audio encodes to 4 stereo pairs

ENCODER OPTIONS	
SELOPT-SK-E2-GL	Software keyed option for ENC – Support for genlock on the input to the encoder
ENCODER FRONT MODULE ONLY	
SEL-FM-ENC2	MPEG-2/4 contribution encoder front module only
ENCODER BACK MODULES	
SEL-BM-EN2-EES	Single back module for ENC2 front module with HD-BNC connectors for SDI input, 2 SDI outputs, 2 ASI outputs, 8 AES (unbalanced) inputs and socket/plug for 4 GPI inputs, 4 GPI outputs and 2 serial data connections
SEL-BM-EN2-OES	Single back module for ENC2 front module with SFP optical input (order separately), HD-BNC connectors for SDI outputs, 2 ASI outputs, 8 AES (unbalanced) inputs and socket/plug for 4 GPI inputs, 4 GPI outputs and 2 serial data connections
SFP DUAL-INPUT OPTION	
OP+SFP+RR	Small Form Factor Pluggable (SFP) for Imagine Communications Fiber Optic Products. Dual PIN receiver with pathological support for baseband video

Images/Diagrams



PROD - MCP MODULE - SEL-1ENC1-EES / SEL-1ENC2-EES - SWATCH



PROD - MCP MODULE - SEL-1ENC1-OES / SEL-1ENC2-OES - SWATCH