PRODUCT SHEET

Neuron

One platform for all IP & SDI processing needs

→ evs.com/neuron



Product overview

Neuron offers the most powerful **real-time media processing** capabilities in the industry and can be used to bridge the gap between **SDI** and any type of **IP** media streams, protecting your investments today for future demands. The **Software-defined** platform can process dozens of streams with the **lowest possible latency** while consuming only a **fraction of the electrical power** a CPU-based system would use. Since the functionality of each board is defined by the software, each processing board can run **all identities**: Bridge, Convert, Compress, Protect, Shuffle and View.

Core benefits

UNPARALLELED DENSITY

A 1 RU Neuron frame, containing two processing boards, has the power to process up to 64 HD channels or 16 UHD channels.

HUGE SET OF FUNCTIONS

Bridging, (de)embedding, synchronization, HDR<>SDR, Back-up switching, firewall, U/D/X conversion, multiviewing and more AV processing. It's all possible using the same platform.

PEACE-OF-MIND OPERATION

EVS is field-proven at providing the most reliable 24/7 support for 365 days a year through our worldwide support offices.

DESGINED FOR OPTIMIZED TCO

Decreased connectivity costs, increased flexibility in processing functions and on average 60% less power consumption compared to modular equipment.

INTUITIVE GRAPHICAL INTERFACE

The Cerebrum powered control interface uses graphical representations of the processing paths rather than a complex list of parameters.

FUTURE READY

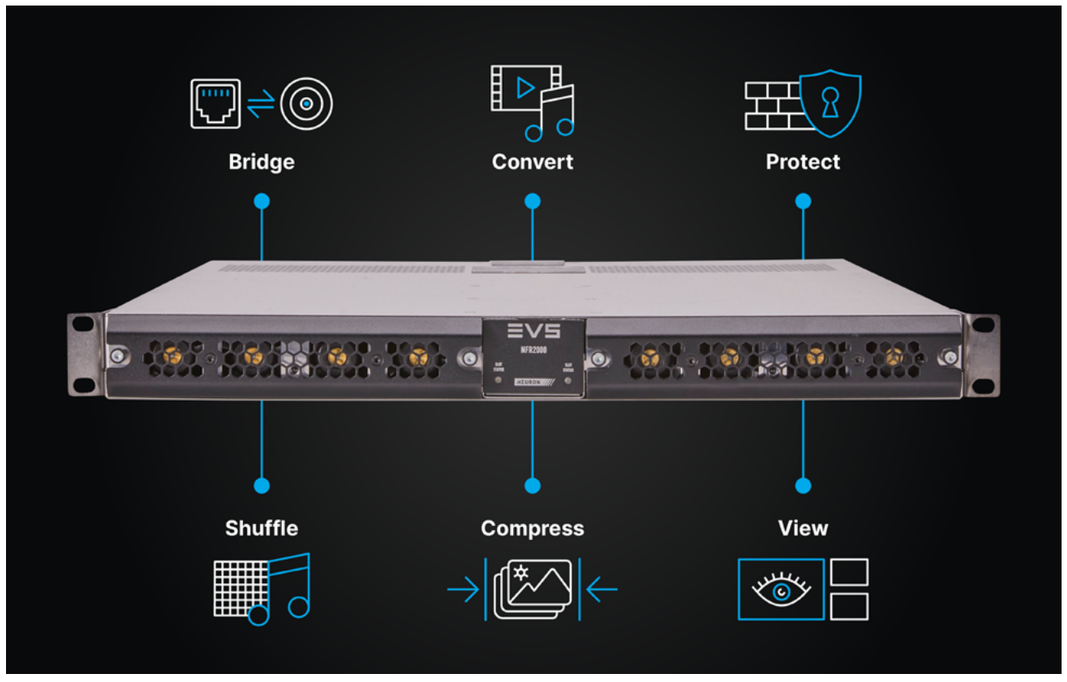
As the broadcast market is changing rapidly, Neuron can adapt to future formats and standards due to its software-defined architecture.

What is Neuron?

- Neuron is a real-time live media processor designed for IP infrastructures while still offering the option to support SDI
- Software defined platform providing maximum flexibility, e.g.: reprogramming a bridge to a multiviewer is possible.
- Ethernet connectivity with multiple redundant true 100Gb/s, 25Gb/s or 10Gb/s ports
- Capable of processing up to 64 Full HD signals or 16 UHD in a 1RU frame containing 2 processing boards
- Can optionally have 80 SDI connectors per frame (40 per processing board) and act as an SDI ↔ IP bridge/gateway
- Compatible with all important standards and technologies like ST2022, ST2110, AES67, MADI, 2SI, SQD, JPEG-XS, Dolby, HDR conversion, and more.



Six identities on one platform



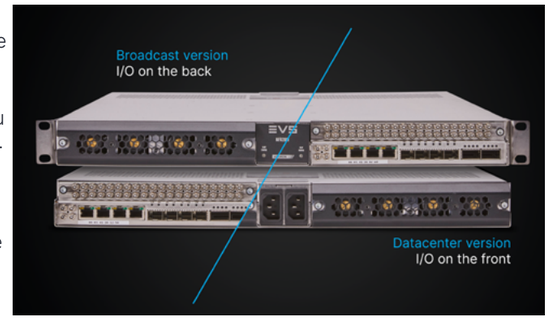
- **Bridge:** bridging SDI ↔ IP and IP ↔ IP, also known as IP gateways.
- **Convert:** audio, video and ancillary data processing, like up/down/cross and HDR conversion.
- **Protect:** auto failover switching and firewall applications for 100% network isolation.
- **Shuffle:** shuffling, routing and processing thousands of audio channels in multiple IP streams.
- **Compress:** low latency JPEG-XS compression for inter-site distribution.
- **View:** low latency live production multiviewing with on-the-fly layout editing capabilities.

Flexible and power efficient hardware

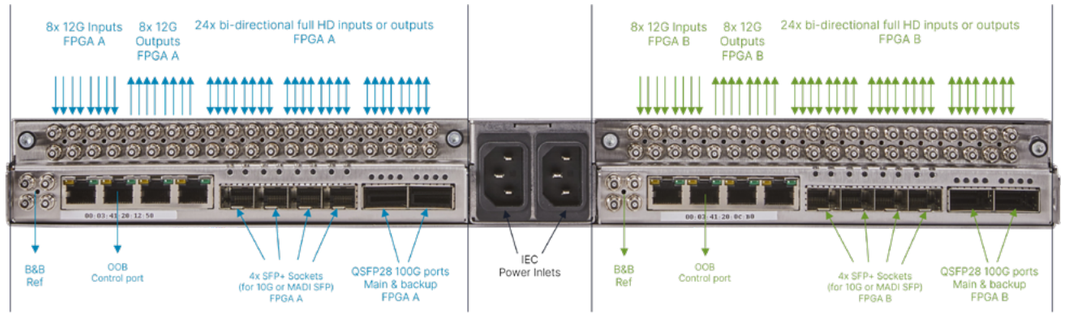
A Neuron frame is only **1RU** high and can contain 2 processing boards. It is available as a **broadcast version**, with all I/O on the back, and as a **datacenter version**, with all I/O on the front.

Each processing board can have **any of the 6 identities**, so you can for instance have a convert and a multiviewer in one frame.

During the development of Neuron, **power consumption** was a very important design criteria. Neuron can process up to 64 1080p signals per frame at less than **250W (~4W/Ch)** in Bridge mode. This is on average **40%** of the competition, and **60%** less than "modular glue", at 1/6th of the rack-space.



Redundant 100Gb/s IP connectivity with SDI I/O as an option



A Neuron processing board by default has main and backup **100Gb/s** single MAC Ethernet ports based on **QSFP28** sockets. These "red" and "blue" Ethernet ports support **ST2022-7** packet redundancy for all your incoming and outgoing audio, video and anc data IP streams. Some identities can also use the 4x SFP+ sockets for **MADI** or **10Gb/s Ethernet** connectivity. Besides the SFP connections, a processing board by default has 4 HD-BNCs to connect B&B. These reference signals can be synced to PTP, both as input as well as output.

A processing board can optionally be equiped with the SDI expansion board. This expansion board adds **8x 12G SDI inputs**, **8x 12G SDI outputs** and **24 bi-directional 3G SDI** I/O on HD-BNC to the IP connectivity of the main processing board. The bi-directional SDI connectors can be either an input or an output, switchable on-the-fly without requiring a reboot or a firmware update.

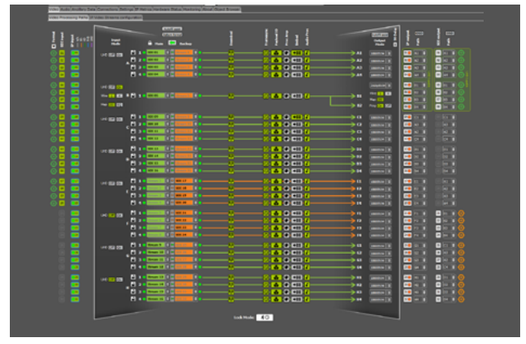
For Dolby en-/decoding, the processing board can optionally be equiped with a **SOC module**, enabling x86 processing.

Fully scalable platform: license only what you use

All Neuron processing boards are generic and can run all identities. The actual number of channels a board can process, and what kind of processing is available on each processing path, is defined by the **base-licenses** and **optional licenses**.

Thanks to this licensing structure, you don't pay for the functionality you don't use. Also, you can add functionality at a later stage without having to buy additional hardware.

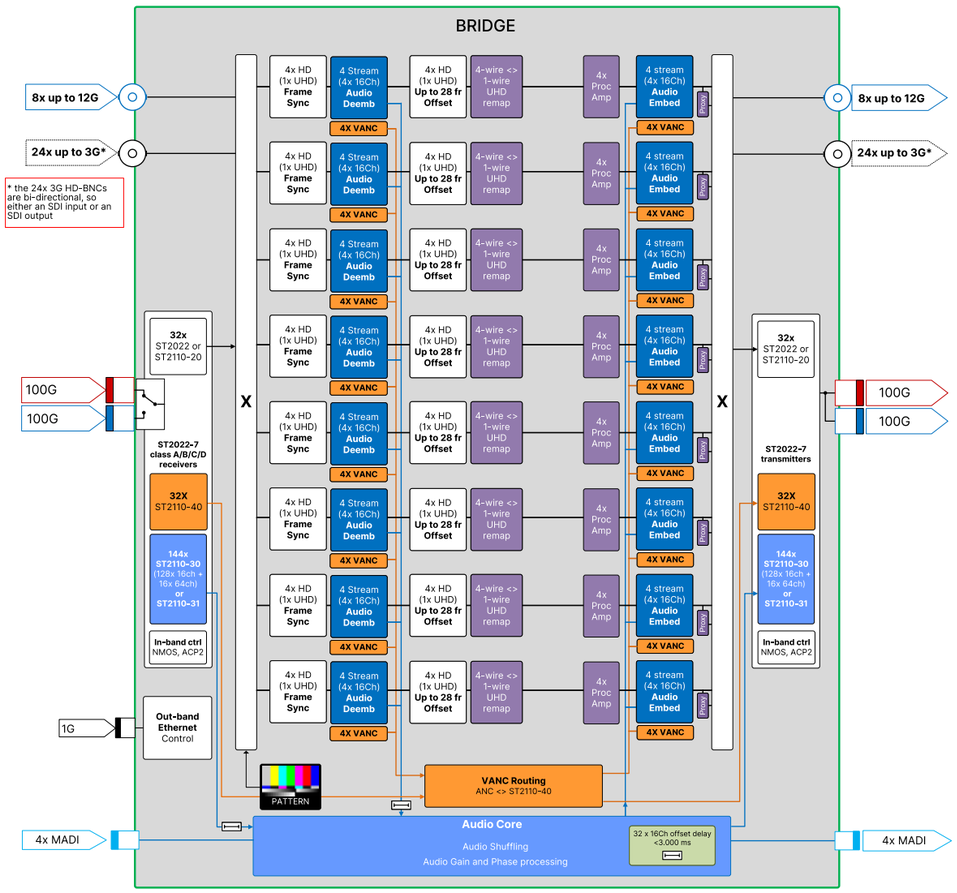
The details about which optional licenses are available for each identity can be found in the individual identity Datasheets. You can find these on **evs.com/neuron**.



Interface of a fully licensed Bridge in Cerebrum

Bridge

IP gateway and synchronizer for baseband IP and SDI video and audio

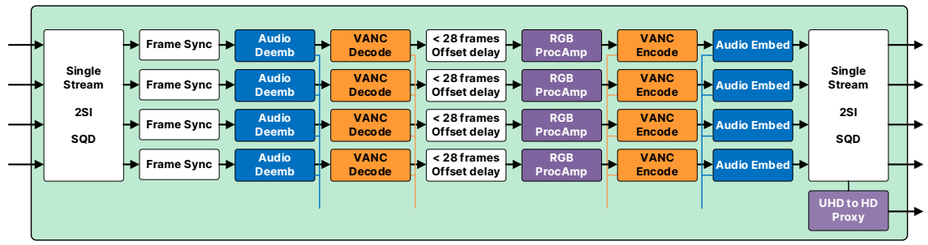


Bridge is an SDI ↔ IP gateway developed for low-latency live media infrastructures. Supporting all modern ST2022 and ST2110 encapsulation standards, a Neuron Bridge card can bridge up to 32 x 1080p SDI feeds (or up to 8x 2160p SDI feeds) to and from IP via redundant 100GbE network interfaces. Repacketizing ST2022-6 to ST2110-20/30 and vice versa is also possible. Since two of these boards fit in a 1RU Neuron frame, the total density of Bridge is 64 1080p feeds per rack unit.

Each processing path is capable of frame-synchronizing, de-embedding and embedding audio/ancillary data. Video delay, UHD remapping/gearboxing, RGB ProcAmp, audio shuffling and audio gain/phase/delay processing capabilities can be added optionally. Also optional is generating downscaled 1080p copies (proxies) of each UHD stream, to send to a Neuron Multiviewer (View) without it having to use the capacity of 4 FHD inputs.

Bridge can be equipped with the Neuron SDI expansion module, which supports up to 40 x SDI I/O via HD-BNC connectors.

Closeup of one of the processing paths (1x UHD or 4x full HD)



A Neuron Bridge has 8 of these UHD processing paths. In total a Bridge can process up to 32x 1080p (= 8x 2160p). All paths include frame synchronization, audio embedding and audio deembedding. Video delay, UHD remapping/gearboxing, RGB ProcAmp/color correction, audio shuffling and audio gain/phase/delay processing capabilities can be added optionally. Also optional is that Bridge can generate downscaled 1080p “proxies” of each UHD stream (single stream/wire), to send to Neuron View without it having to use the capacity of 4 inputs.

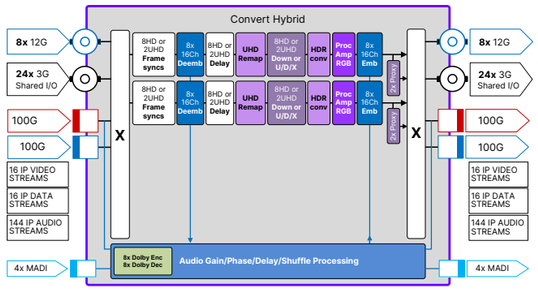
Features

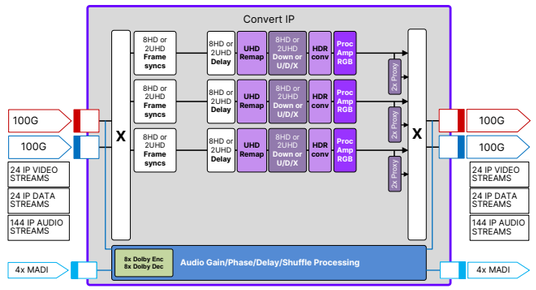
- Supported standards: UHD (single wire, 4 wire SQD/2Si), FHD Level-A and HD on 50Hz and 59.94Hz.
- Supported framerates: 2160p/1080p 60/59.94/50/30/29.97/25/24/23.98/PsF and 1080i/720p 60/59.94/50
- Up to 32 ST2110-20 (video) and ST2110-40 (anc data) input and output streams
- Up to 144 ST2110-30/31 (audio) input and output streams of which 128 are 16ch and 16 are 64ch
- Up to 32 channels of bridging SDI to/from IP (requires SDI expansion board)
- Up to 32 channel frame-sync to local clock on external ref (B&B or ST2059)
- Up to 32 times 16 channel audio de-embedding or embedding
- Transparency of VANC data to ST2110-40 in SDI and vice versa with possibility to shuffle streams
- All inputs can be mapped to any main or backup (auto switchover) input of the processing paths
- **Optional:** Up to 32 ch video offset delay of up to 28 frames (= 0.5 seconds of FHD/UHD and 1 second of 1080i/720p)
- **Optional:** UHD Remapping from 4-wire to 1-wire and vice versa
- **Optional:** Up to 32 channels RGB ProcAmp / color correction
- **Optional:** Audio gain/phase and delay
- **Optional:** Up to 8 downscalers to generate 1080p copies of each UHD stream
- **Optional:** Up to 4x 64 channels MADI IO
- **Optional:** Mono channel audio shuffling of up to 4.352 x 4.352 channels, controllable via SW-P-08
- Dual QSFP28 100Gb/s single-MAC
- PTP Network timing with slave functionality, compliant with SMPTE ST2059-2 (BMCA)
- PTP-based Ancillary Time Code (ATC) generator supporting 50p, 50i, 59.94p, and 59.94i frame rates
- External black burst inputs
- Possibility to output 2x Analog bi-level reference locked to PTP fully adjustable over a frame in pixel increments
- Redundant IP streams in and out (ST2022-7 class A/B/C/D compliant)
- Multicast and unicast, configurable per streams
- Automatic fan control
- Stream and Ethernet port redundancy
- Compatible protocols: ACPv2, HTTP JSON API,DNS, IGMPv2, IGMPv3, LLDP, DHCP, SDP, NMOS IS04, NMOS IS05, 802.1as, ST2059-1/2, ST2022-6/7 class A/B/C/D, ST2110-20/30/31/40

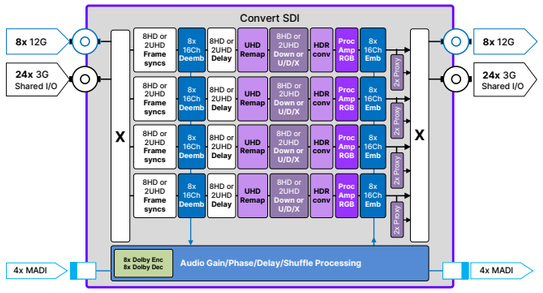
For more detailed block schematics, ordering information and technical specifications, please refer to the Convert datasheet available on evs.com/neuron

Convert

Realtime format conversion, color space conversion, Dolby encoding/ decoding and other processing for IP, SDI and Hybrid environments







Neuron Convert is a multi-channel video and audio processor developed for low-latency and high-bandwidth IP, SDI or Hybrid-based infrastructures. Convert is capable of processing 1080p or 2160p signals and transport them over redundant (ST2022-7) IP streams and/or SDI I/O. The Convert Hybrid can process up to 16x 1080p (= 4x 2160p) channels, Convert IP can process up to 24x 1080p (= 6x 2160p) channels, and the Convert SDI can process up to 32x 1080p (= 8x 2160p) channels. Since 2 of these boards fit in one Neuron frame, the density per RU is twice the processing capacity per board.

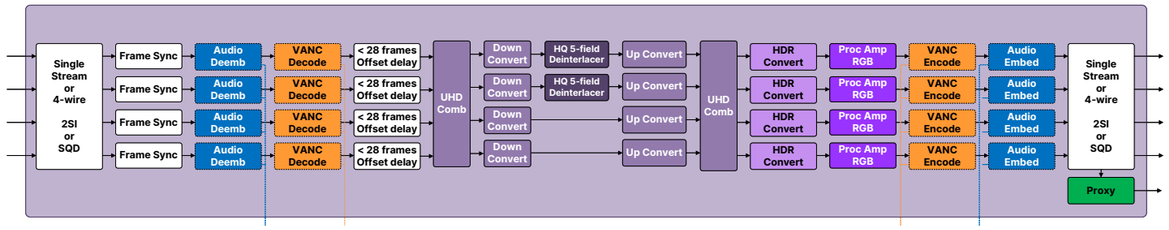
All Convert identities can perform many different video and audio processing functions. Depending on the active licenses it can perform frame syncing, audio and VANC de-embedding, video offset delay, UHD remapping, up/ down/cross conversion with high quality deinterlacing, HDR conversion, color correcting proc amps, VANC and audio embedding and audio gain/phase/shuffling processing. Also optional is generating downscaled 1080p copies (proxies) of each UHD stream, to send to a Neuron View or other multiviewer, without having to use the capacity of 4 FHD inputs.

Combining four 1080p paths will offer UHD processing. Virtually any baseband signal can be processed, from 720p all the way up to 2160p.

If a Convert Hybrid is equipmed with the optional SDI I/O module, 40 HD-BNC SDI connectors are added to allow easy integration of IP into existing SDI baseband operations, simultaneously acting as bridge.

Optionally Convert offers additional audio I/O with 4x MADI licenses (MADI SFPs not included) and up to 8 Dolby D/ D+/E/ED2 encoders and 8 decoders, including downmixing, licensable per decoder and encoder. The Dolby E encoding and decoding licenses require the SMARC expansion module to be installed on the processing board.

Closeup of one of the processing paths (1x UHD or 4x full HD)



Depending on the configuration (Hybrid, IP or SDI) Neuron Convert has 4, 6 or 8 of these UHD (=4x 1080p) processing paths respectively. Depending on the active licenses, these processing paths include frame syncs, audio and VANC de-embedders, video offset delay, up/down/cross converters, high quality deinterlacers, HDR converters, color correcting proc amps, VANC and audio embedders, audio gain/phase/shuffle functionality and downscaled HD proxies of UHD feeds.

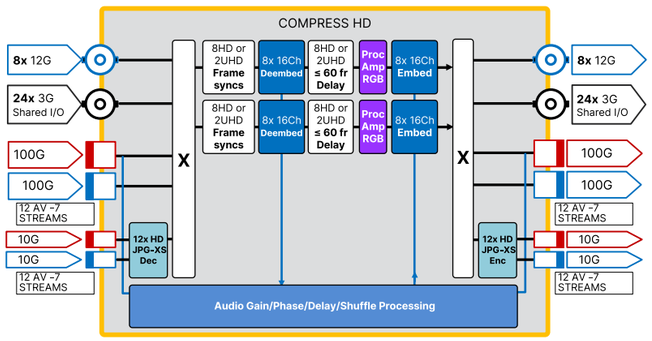
Features

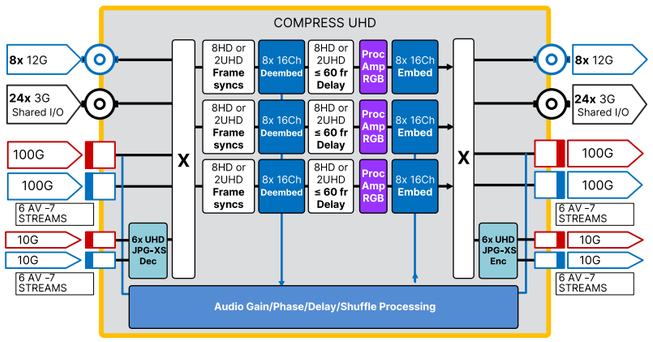
- Supported standards: UHD (single wire, 4 wire SQD/2Si), FHD Level-A and HD on 50Hz and 59.94Hz.
- Supported framerates: 2160p/1080p 60/59.94/50/30/29.97/25/24/23.98/PsF and 1080i/720p 60/59.94/50
- Up to 24 ST2110-20 (video) and ST2110-40 (anc data) input and output streams on Convert IP
- Up to 16 ST2110-20 (video) and ST2110-40 (anc data) input and output streams on Convert Hybrid
- Up to 144 ST2110-30/31 (audio) input and output streams (128x 16ch and 16x 64ch) on Convert Hybrid and Convert IP
- Up to 16 channels of bridging SDI to/from IP on Convert Hybrid (requires SDI expansion board)
- Up to 16 (Hybrid), 24 (IP) or 32 (SDI) channels frame-sync to local clock on external ref (B&B or PTP)
- Up to 16 (Hybrid) or 32 (SDI) times 16 channel audio de-embedding or embedding
- Transparency of VANC data to ST2110-40 in SDI and vice versa with possibility to shuffle streams
- All inputs can be mapped to any main or backup input (auto switchover) of the processing paths
- **Optional:** Video offset delay of up to 28 frames (= 0.5 seconds of FHD/UHD and 1 second of 1080i/720p)
- **Optional:** UHD remapping/gearboxing (12G SDI and single stream ST2110-20 UHD to quad-link, and quad-link to single-link 12G SDI UHD or aingle-stream ST2110-20 UHD)
- **Optional:** Either FHD / UHD down conversion or FHD / UHD up/down/cross conversion
- **Optional:** 2x high quality 5-field motion compensated de-interlacers per 4 FHD processing paths
- **Optional:** Either LUT-based or adaptive (B<>COM) HDR conversion
- **Optional:** RGB and YCbCr ProcAmp / color correction
- **Optional:** Audio gain/phase/delay
- **Optional:** Downscalers to generate 1080p copies (proxies) of 1-wire 2160p streams for multiviewers
- **Optional:** Up to 4x 64 channels bi-directional MADI IO
- **Optional:** Mono channel audio shuffling of up to 4.172 x 4.172 channels (depending on identity), controllable via SW-P-08
- **Optional:** Up to 8 Dolby encoders and 8 Dolby decoders capable of handling E/D/D+ and ED2 including downmixing Dolby to PCM stereo (requires NEU-SMARC-05D) (ED2 takes up 2 Dolby enc/dec licenses)
- Clean switch and fast switch capabilities between all inputs (IP and/or SDI)
- Dual QSFP28 100Gb/s single-MAC
- PTP Network timing with slave functionality, compliant with SMPTE ST2059-2 (BMCA)
- External black burst inputs
- Possibility to output 2x Analog bi-level reference locked to PTP fully adjustable over a frame in pixel increments
- Redundant IP streams in and out (ST2022-7 class A/B/C/D compliant)
- Multicast and unicast, configurable per streams
- Compatible protocols: ACPv2, HTTP JSON API, DNS, IGMPv2, IGMPv3, LLDP, DHCP, SDP, NMOS IS-04, NMOS IS-05, 802.1as, ST2059-1/2, ST2022-7 class A/B/C/D, ST2110-20/30/31/40

For more detailed block schematics, ordering information and technical specifications, please refer to the Convert datasheet available on evs.com/neuron

Compress

Visually lossless, ultra-low latency, multichannel JPEG XS compression





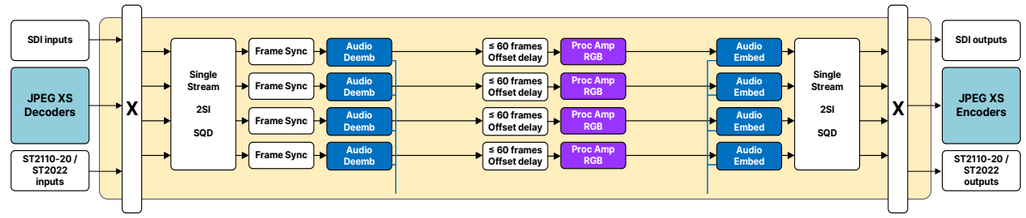
Compress centers around JPEG XS decoding and encoding. The JPEG XS (ISO/IEC 21122) standard is a lightweight low latency image and video compression algorithm (codec) that maintains visually lossless compression. The typical compression ratio is between 1:6 and 1:12, so a UHD signal which uses 12Gb/s normally, would require 1Gb/s after JPEG XS compression and is still visually lossless. There are 2 configurations available with various numbers of HD or UHD JPEG XS encoders and decoders.

Besides JPEG XS compression, the Compress configurations use the 100Gb/s QSFP28 interfaces for all baseband streams (uncompressed ST2110-20 and ST2022 streams) and the 10Gb/s SFP+ interfaces for all compressed I/O (ST2110-22 streams), meaning what's going in the card is physically separated from what goes out of the card, turning it into a perfect Firewall for IP infrastructures.

Like most Neuron cards, the Compress configurations have frame synchronizers, audio de-embedders, video offset delay, color correcting proc amps and audio embedders on all processing paths. The audio embedders can embed any of the audio in the audio matrix coming from the audio de-embedders and the ST2110-30 IP audio input streams.

Optionally, the Compress can be expanded with an SDI I/O module. This will add physical HD-BNC SDI connectors and allows easy integration of video over IP with existing SDI baseband operations, simultaneously acting as bridge.

Closeup of one of the processing paths (1x UHD or 4x full HD)



The Compress UHD has up to 6, and Compress HD has up to 4 of these processing paths. Depending on the active licenses, these processing paths include framesyncs, audio and VANC de-embedders, video offset delay (optional), color correcting proc amps (optional), VANC and audio embedders and audio gain/phase/delay functionality (optional). Outside the processing paths, in front and behind the muxes, there are the multiple optional JPEG-XS encoders and decoders.

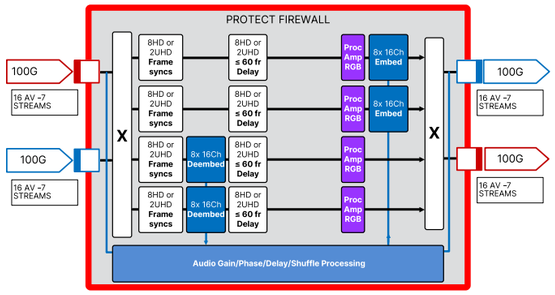
Features

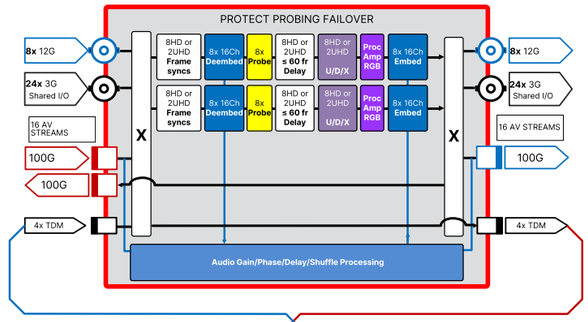
- Standards supported: UHD, 3G-SDI level A, HD-SDI, ST2022 and ST2110-20/22/30.
- JPEG XS Encoding output as ST2110-22
- JPEG XS Decoding received as ST2110-22
- ST2110-22 streams in and out available on 10GbE interfaces
- Processing channels can be used in transparent mode allowing for gateway functionality
- Up to 24 IP video listeners and 24 IP audio listeners
- Up to 16 channels of bridging SDI to/from Ethernet (requires SDI optional board)
- Up to 24 channel frame-sync to local clock on external ref (B&B or ST2059)
- Up to 24 times 16 channel audio de-embedding
- Up to 24 times 16 channel audio embedding
- Up to 24 times Proc-amp for RGB and RGB-Black gains
- Individual audio channel gain/phase and stream offset delay
- Mono channel audio matrix
- Clean switch and fast switch capabilities between all inputs (IP and/or SDI)
- Each SDI or IP input can be used as a back-up signal for an SDI or IP output
- Redundant IP signals in and out (output port replication, ST2022-7 compliant)
- PTP Network timing with slave functionality, compliant with SMPTE ST2059-2 External black burst inputs
- Audio synchronization
- 2x Analog bi-level reference out
- Multicast and unicast selectable per streams
- Selectable VLAN and priority per stream
- Compatible protocols: ACPv2, DNS, IGMPv2, IGMPv3, LLDP, HDCP, SDP, NMOS IS04, NMOS IS-05, 802.1as, ST2059-1/2, ST2022-6/7, ST2110-20/22/30

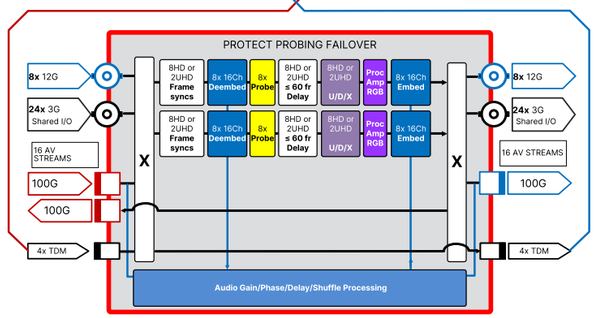
For more detailed block schematics, ordering information and technical specifications, please refer to the Convert datasheet available on evs.com/neuron

Protect

Bi-directional IP Firewall and Dual Card Probing Failover Switch







The Protect identities guarantee and safeguard signals coming in and going out of facilities and interconnections between venues. The Protect Firewall (PFG1616) can be used as a bi-directional IP Firewall for complete isolation between facilities. The Protect Failover (PXG1616) is a dual card solution. 2 PXG1616 together will act as multi-channel integrity checking failover switches and firewalls in one, ideally suited for handover/playout center applications.

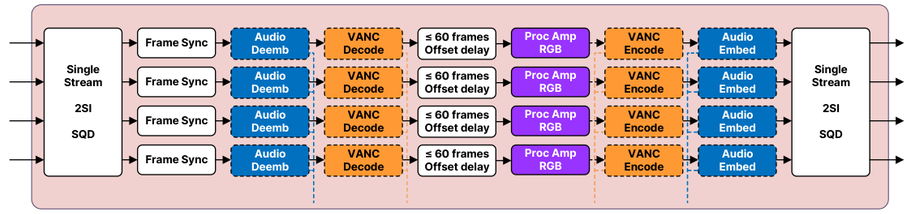
Using all modern ST2022 and ST2110 encapsulation standards, the Protect Failover is also capable of bridging up to 16x 3Gb/s or 4x 12Gb/s SDI signals (requires optional SDI board) to redundant 100G Ethernet I/O. Besides bridging, it can also do low latency up/down/cross conversion (optional).

The Protect Probing Failover can have up to 4 UHD processing paths (= 16 Full HD). Depending on the active licenses, these processing paths include framesyncs, audio and VANC de-embedders, Audio/video/VANC probes, video offset delay (optional), up/down/cross converters (optional), UHD remapping, color correcting proc amps (optional), VANC and audio embedders and audio gain/phase/delay functionality (optional). The fail-over switches, controlled by the probes, are at the end of the processing paths. Two of these cards are interconnected via 4 SFP+ connections. These connections do not use Ethernet as a transport layer but our own TDM bus. You can use a Direct Attached Copper wire (DAC) or a fiber connection if the frames are more than 1m (3ft) apart. This application gives you full redundant probing and 100% IP isolation.

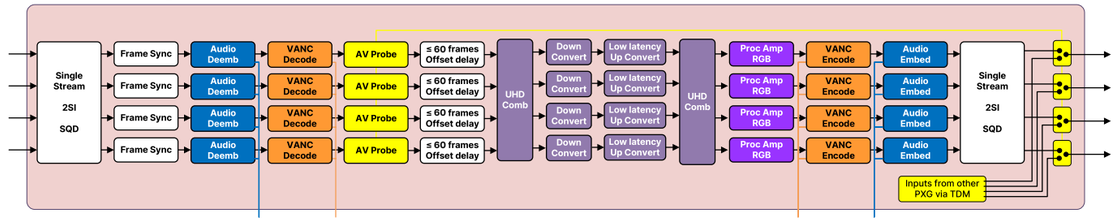
The Protect Firewall can have up to 8 UHD processing paths (= 32 Full HD). These processing paths include framesyncs, audio and VANC de-embedders (incoming signal paths), video offset delay (optional), color correcting proc amps (optional) VANC and audio embedders (outgoing signal paths), audio gain/phase/delay functionality (optional) and UHD remapping.

Closeup of one of the processing paths (1x UHD or 4x full HD)

Protect Firewall:



Protect Probing Failover:



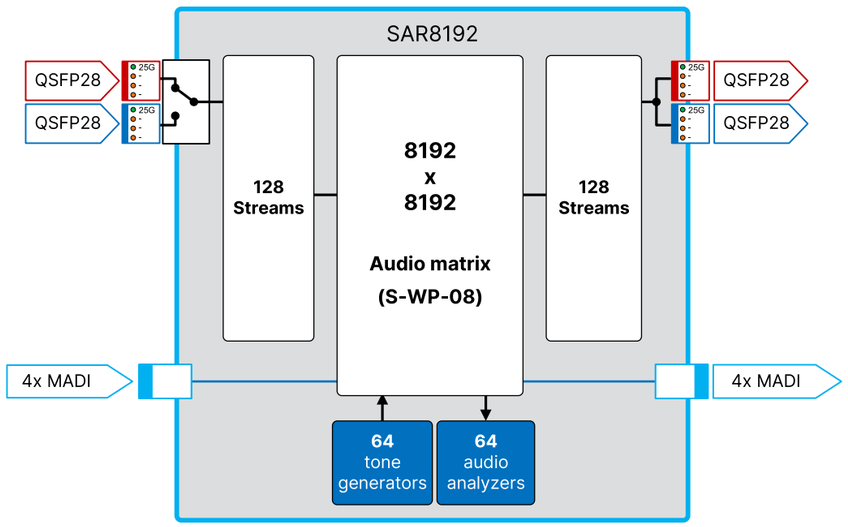
Features

- Supports asynchronous inputs
- Video Standards supported: UHD (single wire 2Si, 4 wire SQD/2Si), FHD Level-A, HD, SD, ST2022 and ST2110 on 50Hz and 59.94Hz.
- UHD remapping (gearboxing) of single wire to four-wire SQD/2SI and vice versa
- Frame-syncs to local clock on external ref (B&B or ST2059) on each processing path, with tracking audio delay
- Audio de-embedding and embedding
- Individual audio channel gain and phase, and audio stream delay (optional)
- True IP isolation using both 100Gb/s single MAC QSFP's. What comes in on QSFP 1, goes out on QSFP 2 and vice versa.
- Protect Failover Probing functions: SDI carrier detect, TRS validation, ANC checksum validation, video content freeze detection with ROI, video content black detection with ROI, VANC WST and OP47 presence detection, Timecode availability, audio channel detection, Audio silence detection, Audio Clip/5 sample full-scale indication
- The Protect Failover can clean switch between local signals and signals coming from another similar card via the TDM bus links on the 4 SFP+ connections.
- In the Protect Failover an extensive probing matrix allows adjustment of individual classes of importance of the channels next to the main and backup channels.
- The Protect Failover can bridge up to 16 channels SDI channels to/from IP (ST2022-6 or 2110-20/30) (optional)
- Protect Failover can perform up/down/cross conversion from and to a maximum of 16x 1080p or 4x 2160p (optional)
- Clean audio switch-over through V fade
- Redundancy in IP signals: Each SDI or IP input can be used as a back-up signal for an SDI or IP output. A single SDI or IP input can be replicated to 2 IP outputs for creating identical stream (port replication)
- PTP Network timing with slave functionality on the Ethernet ports, compliant with SMPTE ST2059-2
- External black burst inputs and 2x Analog bi-level reference out
- Multicast and Unicast selectable per streams
- Selectable VLAN and priority per stream
- Compatible protocols: ACPv2, DNS, IGMPv2, IGMPv3, LLDP, DHCP, SDP, NMOS IS04, NMOS IS05, 802.1as, ST2059-1/2, ST2022-6/7, ST2110-20/30/31/40

For more detailed block schematics, ordering information and technical specifications, please refer to the Protect datasheet available on evs.com/neuron

Shuffle

IP audio matrix/shuffler for 8192 individual channels



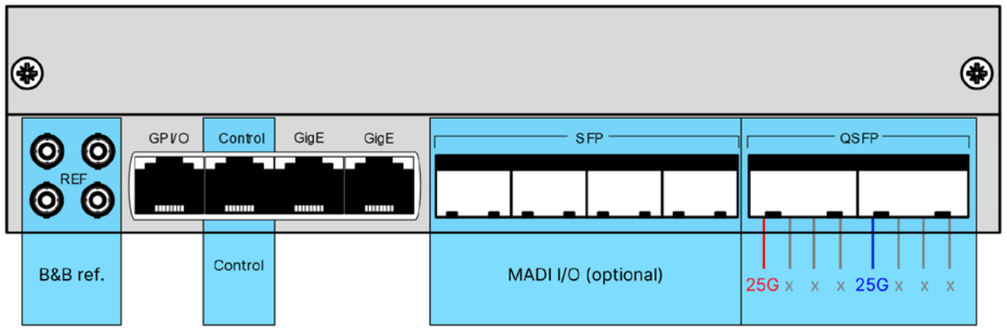
With IP based audio formats, like ST2110-30/31 and AES67, the amount of audio channels within a broadcast facility can easily grow into the thousands. Managing which channels belong in which audio streams and shuffling the various channels from one stream to the other is becoming quite a challenge. With Neuron Shuffle, you can shuffle, mix, gain and delay thousands of audio channels.

Neuron Shuffle is a 8192 x 8192 IP audio matrix. It is fully -7 (class D) compatible on both the 128 input streams as well as the 128 output streams and offers the ability to synchronize all these IP streams. Each stream can consist of up to 64 audio channels. Besides this matrix, it offers more functionality, such as: 64 adjustable tone generators, 64 audio analyzers , 32 audio stream input delays of up to 2300ms (optional), Mono channel gain (optional) and in Cerebrum it features a big matrix view for routing individual audio channels.

The Neuron audio matrix runs on the same hardware as the other identities of Neuron (Bridge, Convert, Compress, Protect and View) meaning that whenever your requirements change, you can reuse the hardware for other purposes. Shuffle handles up to 128 streams on a single QSFP28 connector.

Optionally Shuffle offers additional audio I/O with 4x MADI licenses (MADI SFPs not included).

The Shuffle I/O panel



Instead of using a single MAC 100Gb/s Ethernet connection on QSFP, like all other identities, Shuffle uses the same QSFP but divided into 4 MACs, using only 1 of the 4 in 25Gb/s mode.

Features

- Audio standards supported: ST2110-30/31 and AES67
- 128 IP audio listeners and 128 IP talkers, fully -7 (class D) compatible
- Up to 64 channels per stream, configuration dynamically changeable
- 8192 x 8192 audio channel routing with an additional 64 x 64 channels for the audio generator (audio sources) and audio analyzer (audio destinations) and optionally additional 256 x 256 audio channels using the MADI I/O
- Matrix routing controlled with SWP08
- Stream and channel swapping
- Independent input and output configurations
- Audio synchronization
- Audio clean switch for Dolby-E, and PCM. This feature provides a clean audio switch-over by ducking the audio to -144dB, perform the switch and ramp up again to nominal value. (V-fade)
- PCM audio generator routable to the Matrix with 64 independent channels, 24 bits 48KhZ sine, with a frequency range of 40Hz to 16kHz and adjustable audio level between -63 and 0 dBFS
- PCM audio analyzer for 64 channels with frequency and audio level detection
- 32 streams can be delayed with a maximum of 2300ms (option)
- Mono channel audio Gain from -60 to +12 dB (option)
- Up to 4x64 channels MADI IO (optional)
- PTP Network timing with slave functionality, compliant with SMPTE ST2059-2 External black burst inputs
- Multicast and Unicast selectable per streams
- Single 25GbE link on a 100GbE QSFP28 module
- Compatible protocols: ACPv2, DNS, IGMPv2, IGMPv3, LLDP, HDCP, SDP, NMOS IS04, NMOS IS-05, 802.1as, ST2059-1/2, ST2110-30/31, AES67, SW-P-08,

For more detailed block schematics, ordering information and technical specifications, please refer to the Shuffle datasheet available on evs.com/neuron

View

Low latency, high quality, live production multiviewer



When it comes to low-latency, flexibility and ease of use, there is nothing that compares to Neuron View.

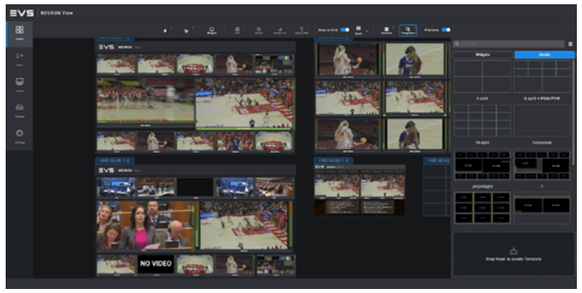
View's unequalled low latency, start-up times, and low power consumption makes it ideal for a wide range of multiview applications, from preview monitoring and shading in small OB-vans, to high resolution, high source count monitor walls for the largest live-production facilities.

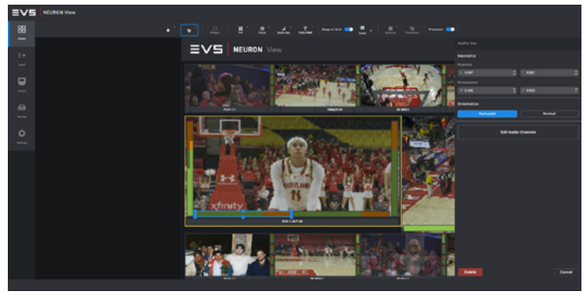
With the intuitive, on-board, web-based graphical user interface you can change the layout of all multiviewer screens on-the-fly and in real-time. You do not need a separate application to design your canvasses. With this GUI you can also save and load snapshots, change the scale, layout and composition of each PIP, configure your IP I/O streams, and configure which PiP displays which group of IP (-20, multiple -30, and -40) streams or which SDI input.

Neuron View's outputs can be configured in many ways between 8 FHD outputs and 4 UHD outputs, all as ST2110-20 IP output streams (View IP), as both IP and SDI outputs (View IP with SDI expansion) or as SDI-only outputs (View SDI). The possible output head configurations are: 1x UHD + 7x FHD, 2x UHD + 6x FHD, 3x UHD + 4x FHD, 4x UHD or 8x FHD. It accepts up to 36 FHD, up to 8 UHD, or a mix of FHD and UHD SDI or IP inputs per board, which can all be displayed in as many different sizes as required in 64 PiPs divided over all output heads.

With Neuron View you also enjoy ultimate flexibility, since it is built on the same processing board as all other Neuron identities: Bridge, Convert, Compress, Protect and Shuffle. In other words, you only need one platform to cover all infrastructural challenges.

Screenshots of the web-based control interface, hosted on the processing boards





Features

- Standards supported: UHD (4 wire SQD/2Si or single wire), FHD Level-A and HD on SDI or ST2110-20 at 50Hz and 59.94Hz. (2160p, 1080p, 1080i and 720p)
- **View IP only:** Ability to receive 36 IP video (ST2110-20), 144 audio (ST2110-30) and 36 timecode (ST2110-40) inputs via 2x QSFP28 true 100Gb/s single MAC
- **View IP only:** PTP timing with slave functionality on the Ethernet ports, compliant with SMPTE ST2059-2 (BMCA)
- **View SDI only:** Ability to receive 36 FHD/HD SDI input (of which 4 via MSA-compliant video SFP modules) or 8 UHD SDI inputs (single wire 12G) or a mix.
- **View SDI only:** SDI ancillary data de-embedding (ST12M ATC_VITC/ATC_LTC)
- **View IP only (optional):** 4x H264 encoded 1080p "proxy" outputs of up to 4 heads. (50Mb/s transport streams)
- External black burst input
- Displays up to 64 PiPs of video with multiple tallies, UMDs and audio meters per PIP, divided over all outputs
- 1x UHD + 7x FHD, 2x UHD + 6x FHD, 3x UHD + 5x FHD, 4x UHD or 8x FHD heads on IP (ST2110-20) and/or SDI
- Display a mix of asynchronous HD, FHD and UHD sources on FHD/UHD displays simultaneously
- High quality image processing and scaling
- Ultra-low latency between input and output (20ms@50Hz and 16.7ms@59.94Hz)
- Extremely low power consumption (100W per board)
- Up to 256 channels of audio metering via VU scales, freely assignable to PIPs or separate widgets
- Any number of UMDs and Tallies per PiP, controllable through TSL, ImageVideo and REST API
- Up to 32 Digital clocks and up/down counters
- NTP clock synchronization
- Colored borders
- User definable backgrounds using a color picker for solid color, or image upload (.png)
- Redundant IP input signals (ST2022-7 class D) and output signals (ST2022-7 compliant port replication)
- Inband control
- Static routing
- Compatible protocols: ACPv2, DNS, IGMPv2, IGMPv3, LLDP, DHCP, SDP, NMOS IS-04, NMOS IS-05, 802.1as, ST2059, ST2110-20/30/40, TSL v5

For detailed block schematics, ordering information and technical specifications, please refer to the View datasheet available on evs.com/neuron

Click here to contact us for more information or to book a demo

© 2026 EVS Broadcast Equipment,
all rights reserved.

EVS is globally recognized as the leader in live video technology for broadcast and new media productions. Our passion and purpose are to help our clients craft immersive stories that trigger the best return on emotion. Through a wide range of products and solutions, we help deliver the most gripping live sports images, buzzing entertainment shows and breaking news content to millions of viewers every day – and in real-time.

→ evs.com