

## FLASHLINK

FRS-HD-XMUX4

# HD/SD-SDI Frame synchronizer with digital audio embedder/de-embedder

**Nevion's Flashlink FRS-HD-XMUX4 is a feature rich frame synchronizer for HD-SDI and SD-SDI with built-in audio embedder/ de-embedder.**

The Nevision technology for configurable AES ports makes the product configurable to most embedding de-embedding applications. Its ability to do simultaneously embedding and de-embedding together with the feature of delaying audio and video separately makes the product well suited for use in line with audio processing gear.

The de-glitcher capabilities make the FRS-HD-XMUX4 the preferred choice for frame synchronization applications when used in front of or after a routing switcher the output is always error-free. Additionally, all synchronous switching is seamlessly presented at the output of the FRS-HD-XMUX4.

The FRS-HD-XMUX4 also comes with option for optical short haul receiver making it useful in optical video networks.

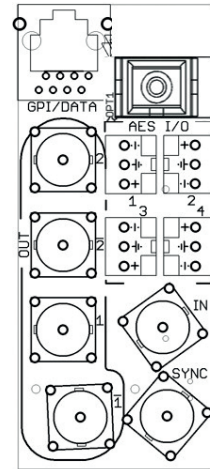
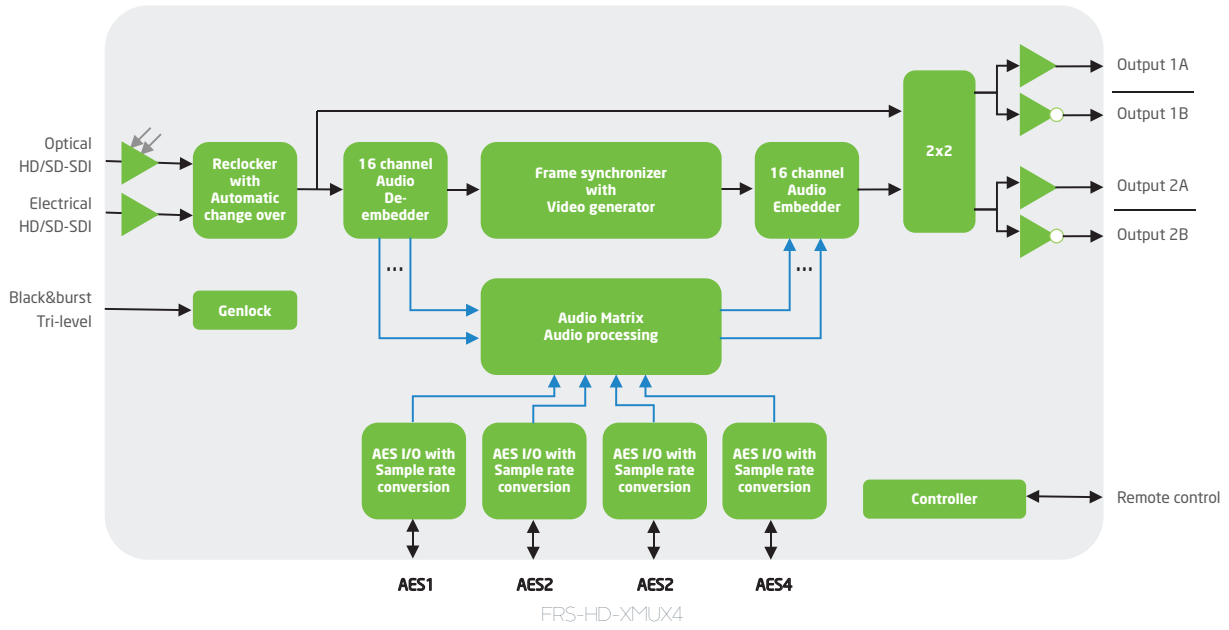
Its small footprint, low power consumption and Nevision panel control support makes it ideal for outside broadcast applications.

### Applications

- Studio infrastructure
- Studio interconnect
- OB production
- Frame synchronisation
- Audio embedding/de-embedding

### Key features

- 4 x HD-SDI outputs
- 4 x AES input/output ports, user programmable
- Optical short haul input (optional)
- HD/SD video support, including DVB-ASI in through mode
- De-glitching of input video signal (always seamless output)
- HD/SD frame sync /delay (8 frames max)
- Luma/chroma gain and level adjustment
- Audio delay enabling Dolby-E processing delay correction
- Audio router for embedded audio
- Embedded audio gain adjustment



FRS-HD-XMUX4 backplane

## General

|  |  |
|--|--|
| Power consumption                          | +5VDC / 5W max   |
| Frame population alternatives <sup>1</sup> | 9 cards with PWR-AC-75W only installed<br>6 cards with PWR-AC15/15/5/5V or<br>PWR+DC15/15/5/5V installed |
| Control and monitoring                     | Multicon GYDA ver 3.0 or higher<br>Interface: Web/SNMP or control panel                                  |

## Supported standards

|  |   |
|--|---|
| SD-SDI, 270 Mbps                       | SMPTE 259M, SMPTE 272M-AC                                     |
| HD-SDI, 1485 Mbps                      | SMPTE 292M, SMPTE 274M, SMPTE 291M,<br>SMPTE 296M, SMPTE 299M |
| Video switch point definition and sync | SMPTE RP168 (tri-level),<br>SMPTE 170M, ITU-R. BT.470         |
| AES                                    | AES3-1996   |
| Optical                                | SMPTE 297M, SMPTE 292M  |
| EDH                                    | Compliant to SMPTE-RP165                                      |
| Video payload identification           | SMPTE 352M-2002   |

## Optical SDI input

|                             |                     |
|-----------------------------|---------------------|
| Data rate optical           | 270 – 1485Mbps      |
| <b>Sensitivity</b>          |                     |
| HD-SDI (1485 Mbps)          | Better than -20dBm  |
| SD-SDI (270 Mbps)           | Better than -20dBm  |
| Detector overload threshold | Min. -3dBm          |
| Detector damage threshold   | >+1dBm              |
| Optical wavelength          | 1200 – 1620nm       |
| Transmission circuit fiber  | 9/125um single mode |
| Connector return loss       | >40dB w/SM fiber    |
| Connector                   | SC/UPC              |

## Electrical SDI input

|                   |  |
|-------------------|--|
| Connectors        | 75 Ohm BNC   |
| Equalization      | Automatic<br>>300m at 270Mbps w/Belden 8281,<br>with BER < 10E-12<br>>100m at 1485Mbps w/Belden 1694A,<br>with BER < 10E-12                  |
| Input return loss | >15dB, 5MHz -1.5GHz  |
| Jitter tolerance  | <b>SD-SDI limit</b><br>10Hz – 1kHz: >1 UI<br>10kHz – 5MHz: >0.2 UI<br><b>HD-SDI limit</b><br>10Hz – 100kHz: >1 UI<br>100kHz – 10MHz: >0.2 UI |

## Electrical sync input

|                   |   |
|-------------------|---|
| Connector         | 75 Ohm BNC  |
| Format            | Black & Burst, Tri-level                              |
| Input return loss | >35dB at < 10MHz<br>30dB at < 30MHz                   |
| Termination       | Selectable internal or external<br>75 Ohm termination |

## Electrical SDI outputs

|  |  |
|--|--|
| Number of outputs                          | 4  |
| Connectors                                 | 75 Ohm BNC   |
| Output return loss                         | >15dB, 5MHz – 1.5GHz   |
| Output signal level                        | 800mV +/- 10%  |
| Output signal rise / fall time (20% - 80%) | SD-SDI limit: [0.4ns – 1.5ns]; <0.5ns rise/fall var.<br>HD-SDI limit: < 270ps, <100ps rise/fall var. |
| Amplitude overshoot                        | <10%   |
| Output timing jitter                       | SD-SDI: <0.2 UI<br>HD-SDI: <1 UI   |
| Output alignment jitter                    | SD-SDI: <0.15 UI<br>HD-SDI: <0.15 UI   |

## AES I/O

|                                |   |
|--------------------------------|---|
| Number of inputs/outputs       | 4 x AES input/output ports, user programmable   |
| Connectors                     | WECCO   |
| Return loss                    | 110R +/-20% 0.1MHz – 6.144MHz   |
| Output jitter                  | <0.0025UI peak  |
| Impedance                      | 110 Ohm transformer balanced  |
| Input audio data rate          | 24 kHz to 100kHz, converted to 48 kHz if not<br>isochronous to either SDI input or sync input |
| Embedded audio word length     | 24 bits   |
| Embedded audio channels status | As received when isochronous, otherwise fixed.  |

## Ordering options

|                |  |
|----------------|--|
| FRS-HD-XMUX4   | SD/HD Frame sync, 4 user-programmable AES I/O ports, audio processing, 4 SDI outputs.                      |
| FRS-HD-XMUX4-R | SD/HD Frame sync, 4 user-programmable AES I/O ports, audio processing, 4 SDI outputs, optical PIN receiver |

<sup>1</sup> When combined with other cards, the overall PSU load must be calculated according to the rating of installed PSU.



## CONTACT INFORMATION

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