

# Matrox X.mio3 LP

## Multi-channel SDI low profile card with hardware-based processing

Matrox X.mio3 LP features re-configurable multi-channel SD, HD, 3G and 4K SDI I/O with advanced hardware-based processing in a low profile card. This card is supported by the Matrox DSX SDK (Software Development Toolkit). Please refer to the Matrox DSX Developer Products datasheet for information on file I/O, software codecs and CPU effects.



### Key features

- Low profile, half-length PCI-e card
- Re-configurable I/O that can support up to 8 SDI inputs or outputs
- Frame synchronizers
- VANC and HANC support for each input and output
- Analog blackburst reference input (tri-level or bi-level)
- On-board multi-channel MADI (Motion Adaptive De-Interlacer)
- On-board multi-channel Up/Down/Cross scaler
- On-board multilayer compositor
- Automatic video relay bypass (optional)
- Live zero-frame delay video and audio mixer

### System bus interface

- Single-slot PCIe Gen2 x8 bus
- Allows for multiple cards in a system

### Digital video inputs and outputs

- Reconfigurable inputs and outputs
- Serial digital component 4:2:2 video at 270 Mbps in accordance with SMPTE ST 259M (SD)
  - 480i (NTSC) at 29.97 fps
  - 576i (PAL) at 25 fps
- Serial digital component 4:2:2 video at 1.5 Gbps in accordance with SMPTE ST 292M (HD)
  - 1080i at 25, 29.97, and 30 fps
  - 720p at 50, 59.94, and 60 fps
  - 1080p/PsF at 23.98, 24, 25, 29.97, and 30 fps
- 3G SDI in accordance with SMPTE ST 424M and SMPTE ST 425M-AB
  - 1080p at 50, 59.94, and 60 fps
  - 8 and 10-bit YUV 4:2:2
- Up to 8 10-bit 4:2:2 serial digital video inputs
- Up to 8 10-bit 4:2:2 serial digital video outputs
- Up to 4 SDI inputs and outputs can be a key or video, where key inputs and outputs can be expanded and inverted
- UHD (Ultra HD) inputs and outputs
  - 3840x2160p at 59.94, 50, and 60 (Quad mode and SMPTE ST 425-5 Level A)
  - 3840x2160p at 29.97, 25, 24, and 23.98
- Simultaneous input and output of different video standards
- Auto-detection of input video standard
- Video relay bypass for 4 inputs (optional)
- Independent horizontal and vertical timing presets for each video output
- Generic support of VANC
- Support for HANC packets (SMPTE ST 12M-2 and SMPTE ST 352)
- Proc amp controls at inputs

### Built-in frame synchronizers

- Up to 8 frame synchronizers
- Corrects timebase of inputs to the genlock source
- 16 channels of audio resampling per input
- 1-frame latency
- Can be optionally disabled

### Motion Adaptive Deinterlacer

- Pixel based operation
- Temporal and spacial-based motion estimation
- Anti-Aliasing filtering
- Telecine detection and film restoration
- Video over film detection
- Up to 4 channels of 1080i30 to 4 channels of 1080p60 processing
- 10-bit processing

### Onboard scaler

- Pixel-based scaling, positioning, and cropping
- Down, up and cross scaling
- Downscaling of up to 8 channels of 1080i30
- Cross scaling of up to 4 channels of 1080i30
- Supports custom resolutions and broadcast resolutions up to UHD
- 8- and 10-bit surfaces
- YUV 4:2:2 and YUVA 4:2:2:4 surface formats
- Aspect ratio and colorimetry conversion between SD and HD
- Ancillary data conversion between SD and HD

### Onboard compositor

- Programmable in single or multiple compositor configurations
- 8- and 10-bit video
- Up to 8 layers of 1080i30 compositing or 2 layers of UHD@p60 compositing
- Full-blend and half-blend mixing
- Shaped or unshaped video compositing
- RGBA to YUVA color space conversion
- Logo input support with pixel-based positioning

**In-line live video and audio mixer**

- Up to 4 live mixers
- Zero frame delay
- 8- and 10-bit video
- Downstream mixing of live video with host buffers
- Mixing of 16 tracks of live embedded audio with host audio

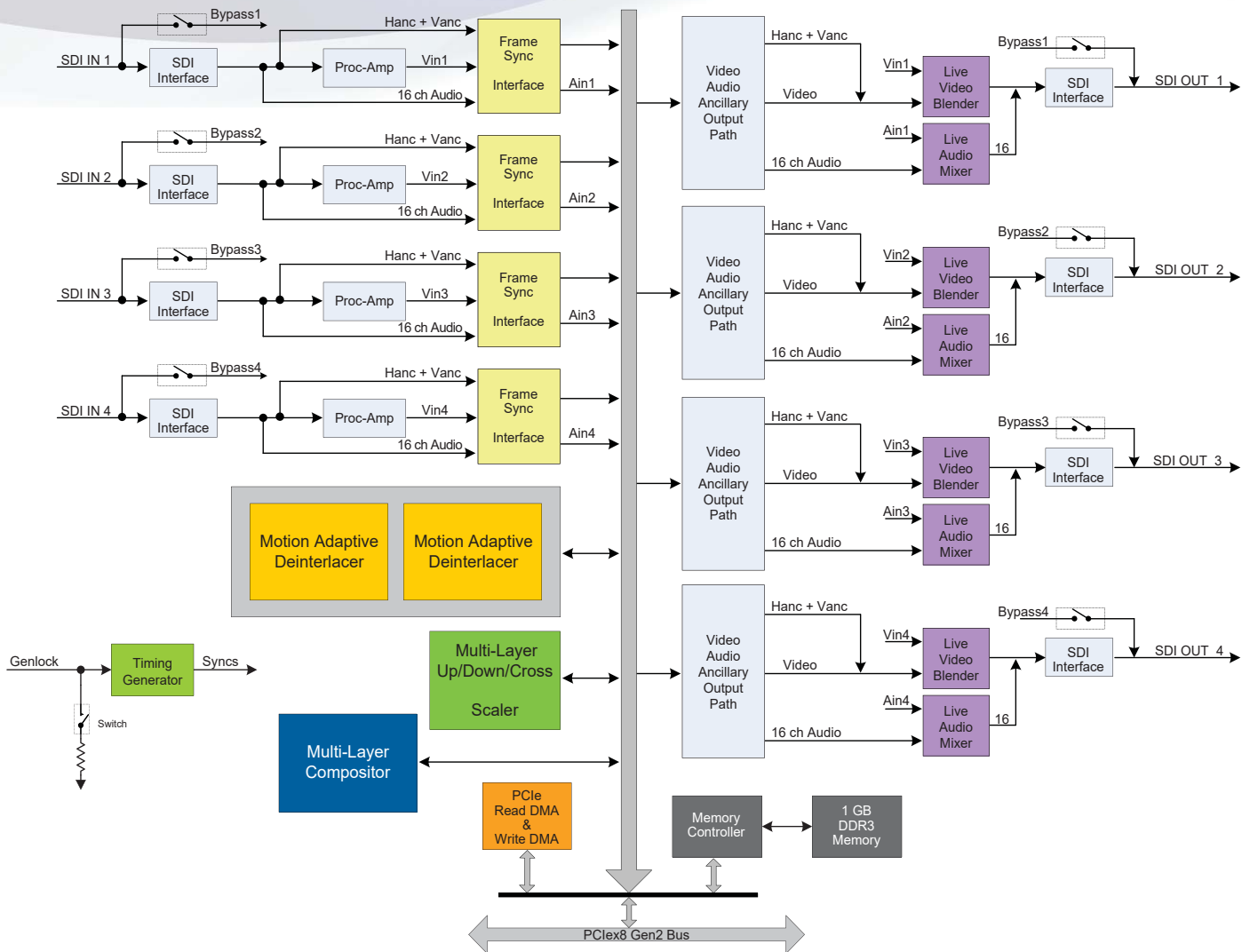
**Embedded audio inputs and outputs**

- Supports up to 16 channels of embedded audio per SDI video stream in accordance with SMPTE ST 272M A, B, and C (SD) and SMPTE ST 299M (HD)
- 48 kHz sampling
- Supports 16-, 20-, and 24-bit audio streams

**Genlock time base**

- Analog blackburst reference (tri-level or bi-level) or SDI input as reference
- Optional latching termination
- Auto detection of genlock standard

**Matrox X.mio3 LP (4 inputs and 4 outputs configuration)**



[www.matrox.com/video](http://www.matrox.com/video)

Corporate Headquarters— Matrox Video Products Group  
 Tel: (514) 822-6364, (800) 361-4903 (North America) Fax: (514) 685-2853  
 E-mail: [video.info@matrox.com](mailto:video.info@matrox.com)



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