

Matrox X.mio3 12G

Multi-channel 12G SDI card with hardware-based processing

Matrox X.mio3 12G features multi-channel SD, HD, 3G and 12G SDI I/O, support for AES/EBU, LTC and GPIO along with advanced hardware-based processing in a single half-length PCI Express card. Offering up to two 12G SDI inputs, two SDI outputs and two reconfigurable 3G/HD/SD SDI I/O with hardware-based format conversion, X.mio3 12G can be used in 12G and HD simulcast workflows. X.mio3 12G also features 4K compositing and mixing to enable graphics workflows. 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

- Half-length PCI Express card
- Up to two 12G SDI inputs
- Up to two 12G SDI outputs
- Two re-configurable SD, HD, 3G SDI I/O
- Frame synchronizers
- Ancillary data support for each input and output
- Analog blackburst reference input (tri-level or bi-level)
- Onboard multi-channel Up/Down/Cross scaler
- Onboard multi-layer compositor
- Live zero-frame delay video and audio mixer
- Up to 16 channels of AES/EBU inputs and outputs
- Up to eight LTC inputs and outputs

System interface

- Single-slot PCIe Gen2 x8 bus
- Allows for multiple cards in a system
- Dual non-MSA SFP+ cages for SDI modules

Digital video inputs and outputs

- Up to two 12G SDI inputs (SDI modules – not included)
- Up to two 12G SDI outputs (SDI modules – not included)
- Two re-configurable SD, HD, 3G inputs and outputs
- SD SDI in accordance with ST 259M (SD)
 - 480i (NTSC) at 29.97 fps
 - 576i (PAL) at 25 fps
- HD SDI in accordance with 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 ST 424M and ST 425M-AB
 - 1080p at 50, 59.94, and 60 fps
- 12G SDI in accordance with ST 2082-10
 - 3840x2160p at 50, 59.94 and 60
- 8- and 10-bit YUV 4:2:2
- SDI inputs and outputs can be a video or key, where key inputs and outputs can be expanded and inverted
- Simultaneous input and output of different video standards
- Auto-detection of input video standard
- Independent horizontal and vertical timing presets for each video output
- Generic support of VANC
- Support for HANC packets (ST 12M-2 and ST 352)
- Proc amp controls at inputs
- Color space conversion at input (YUVA → RGBA)
- Color space conversion at output (RGBA → YUVA)

- Built-in frame synchronizers
- Up to four frame synchronizers
- Corrects timebase of inputs to the genlock source
- 16 channels of audio resampling per input
- Can be optionally disabled

Onboard scaler

- Pixel-based scaling, positioning and cropping
- Scaling of up to two channels of 3840x2160p50/60
- Down, up and cross scaling
- Supports custom resolutions and broadcast resolutions up to 3840x2160p50/60
- 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 eight layers of 1080i30 compositing or two layers of UHDp60 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

- One 12G live mixer
- One SD/HD/3G live mixer
- Zero-frame delay
- 8- and 10-bit video
- Downstream mixing of live video with host buffers
- Mixing of 16 tracks of live audio with host audio

Genlock time base

- Analog blackburst reference (tri-level or bi-level) or SDI input as reference
- Optional latching termination
- VITC support on blackburst (ST 318M-A)
- Auto detection of genlock standard

LTC

- Up to eight unbalanced LTC inputs in accordance with ST 12M-1
- Up to eight unbalanced LTC outputs in accordance with ST 12M-1

Embedded audio inputs and outputs

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

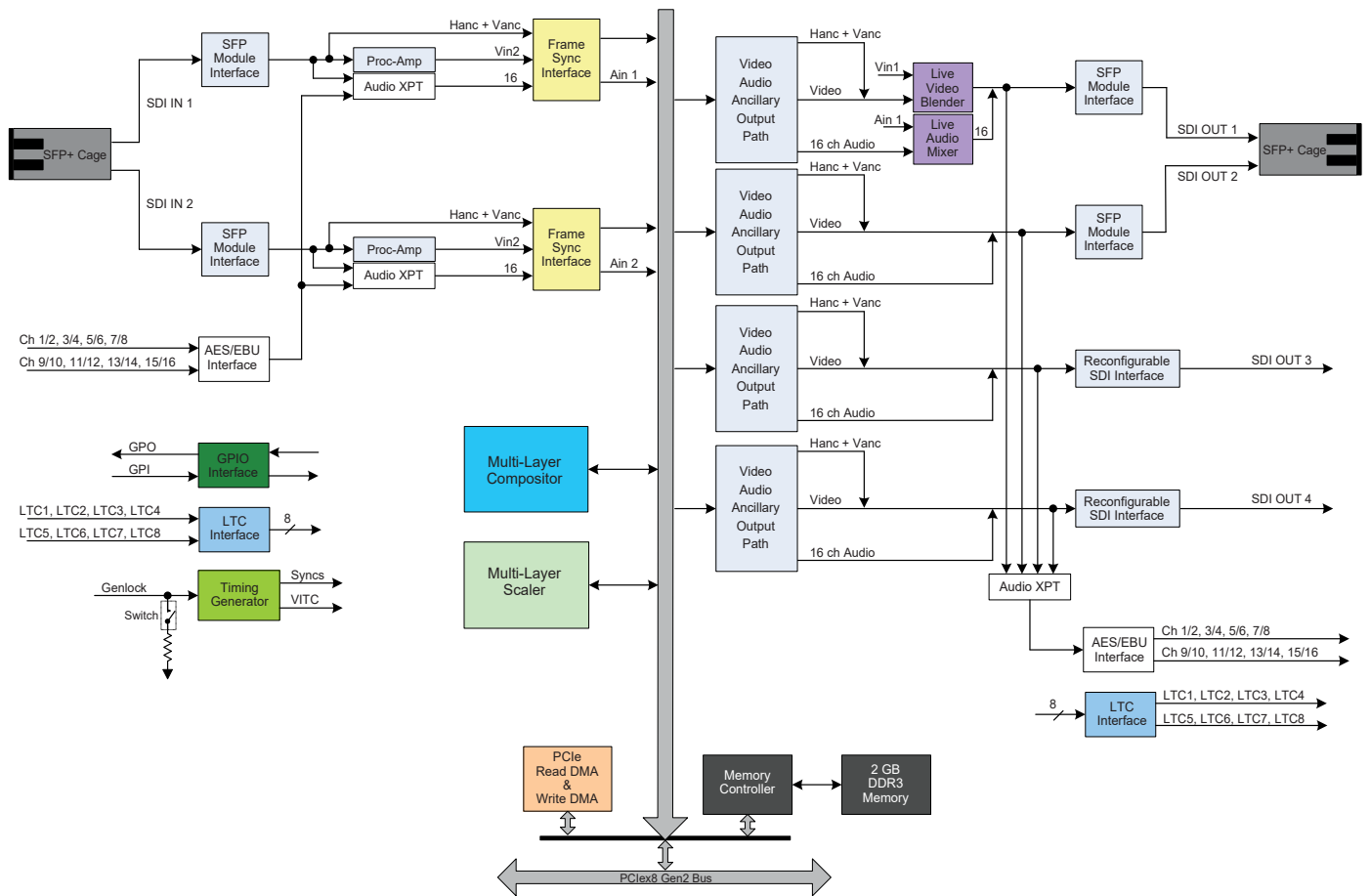
GPIO interface

- Active or Opto-coupled options
- Six inputs, two outputs (other configurations available on request)

AES/EBU audio inputs and outputs

- 16-in/16-out unbalanced AES/EBU audio channels
- 48 kHz sampling
- 16-, 20- and 24-bit audio streams are supported

Matrox X.mio3 12G (reconfigurable SDI I/O configured to outputs)



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



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