VisionAV

Professional Audio and Video Capture Card

Advanced Graphics Display Technology

DESCRIPTION

The VisionAV has two independent video capture channels – one supporting High Definition capture and a second supporting Standard Definition composite video. The VisionAV also adds analog audio capture, which can be synchronised in software using time stamping with all video capture channels.

The High Definition channel supports HDMI, DVI, RGB and Analog Component (YPbPr) input via a DVI-I connector, at resolutions up to 4096 x 4096 pixels and supports 1080p (1920x1080) at 60 frames per second.

The Standard Definition channel is input as composite video on a single RCA connector and can auto-detect between PAL, NTSC and SECAM formats.

The VisionAV captures both video channels simultaneously and triple buffers them into onboard storage, alongside an audio stream that can be selected from the HDMI or one of the analog audio ports. This data can then be processed and copied using DMA transfers to the host system for display, storage or streaming.

FEATURES

Dual Channel Video

- Channel 1: Digital or Analog (HD) Video
- Channel 2: Composite Video (SD) PAL, NTSC and SECAM

Flexible Audio Capture

- Balanced (XLR) and Unbalanced (RCA) from optional audio module (AM2)
- HDMI audio through High Definition Video Channel *

Datapath Unified Vision Driver

- Multiple cards per system, 16 streams per channel
- Fully integrated for use with Datapath Wall Control software for video wall applications
- Frame sync and time stamping
- DirectShow interface
- The RGBEasy API for advanced audio and video control

HARDWARE COMPATIBILITY

When the VisionAV is used with a Datapath graphics card, it is able to transfer the data directly to the graphics card thereby increasing performance and allowing both sources to be viewed at full frame rate.

When the video data is displayed on a non-Datapath graphics card, the VisionAV may still be able to boost performance by using the graphics card's DirectGMA interface to transfer directly to its off-screen memory. This is dependent upon the graphics card driver software capabilities.

The VisionAV is an ideal solution for applications that require both a real time camera feed, with synchronised audio, as well as high resolution image capture at full frame rates.

SOFTWARE CAPABILITIES

Timestamp support for streaming synchronisation

- Synchronisation of multiple inputs, cards and systems (1).
- For edge blending and other applications

Flexible and configurable EDID Management

- Allows programming of custom EDID parameters for Capture cards

Low Input to Output Capture Latency

- DMA to third party graphics vendors back and front buffers via Direct3D
- Compatibility with AMD DirectGMA
- Compatibility with Nvidia GPUDirect *

User Mode filter for source selection

- Enables cropping support in DirectShow on all inputs
- Supports Start and Stop trigger interface on all Vision inputs

(1) *Requires network clock Synchronisation*

AUDIO FEATURES

Input and output connection via the Audio Breakout cable (supplied with all Audio Modules) attached to a 15 pin high density D-type connector on the Audio Module. The physical connections comprise of:

- Left and right balanced audio input on female XLR jacks
- Left and right unbalanced line inputs on female RCA connectors
- Left and right unbalanced line outputs on female RCA connectors for direct passthrough of selected analog input

Flexible input/output mixing capabilities. *

Supports audio capture to the PCI Express bus at popular sample rates from 44.1 to 96 ksamples/s at 16 bits/sample.

Playback and mixing of HDMI embedded audio

MODELS AVAILABLE

VisionAV/F	Capture card, Audio Module, full height bracket (for both cards), 1 x short ribbon cable and 1 x Audio Breakout Cable. Also supplied with DVI/VGA Adapter, DVI/HDMI Adapter.DVI/Component Adapter.
VisionAV/H	Capture card, Audio Module, half height bracket (for each card), 1 x long ribbon cable and 1 x Audio Breakout Cable. Also supplied with DVI/VGA Adapter, DVI/HDMI Adapter.DVI/Component Adapter.
VisionAV/B	Capture card, fitted with full height bracket. Also supplied with half height bracket, DVI/VGA Adapter, DVI/HDMI Adapter.DVI/Component Adapter. (Audio Module not included.)

All products are shipped with the latest software available, unless stated otherwise.
Special requirements may be organised by contacting our Sales team.

SPECIFICATIONS

Board Format	PCI-Express x4 low profile card, 68.9mm x 167.6mm
Connectors (main board)	DVI-I , RCA (female)
Connectors (audio board)	HD15 (male) for connection of supplied Audio Breakout cable: • Stereo line in (2 x RCA), stereo balanced in (2 x XLR), stereo line out (2 x RCA) • 16-way header for connection to main board
HDMI Capture	• Supports HDMI 1.3 to 225MHz (including deep colour modes). For HDCP support, contact the Sales Dept at Datapath for more information • HDMI audio can be selected as source for audio streaming. * • Incorporates TMDS equalizer to support up to 20m cables.
DVI Capture	Supports DVI 1.0 RGB 24bit capture to 165MHz. Incorporates TMDS equalizer to support up to 20m cables.
VGA / YPbPr Capture	Triple ADCs sampling up to 170Msps. Full 4:4:4 sampling, 8 bits per colour. 5-wire, 4-wire or sync-on-green signal formats.
Composite Video Capture	CCIR601 sampling. PAL, NTSC, SECAM formats automatically detected
Audio Capture	Stereo Line-In/Stereo balanced inputs with programmable gain (+/-12dB) 16 bit sampling at 44.1/48/96kHz. Analog stereo line-out for direct passthrough of selected input at up to 64kHz sampling, sourced from Analog input or HDMI channel
Video Capture Memory	256MB high bandwidth frame buffer supports triple buffering of HD and SD video. Local storage of complex scatter-gather tables for DMA engine (eliminates read over-head)
Video Processing	Polyphase FIR scaling engine (7x5) for hardware downscaling and upscaling Colour space conversion allows captured data to be transferred in any format: • RGB 16 bit (5-5-5, 5-6-5), 24 bit (8-8-8) or 32 bit (8-8-8-alpha) • YUV 16 bit (4:2:2) • Mono: 8bit
DMA Engine	Direct DMA to physical or virtual memory buffers with full scatter-gather support. DMA bandwidth : up to 800MB/s 16 independent DMA streams: • Any mix of HD and SD sources, colour space, cropping and scaling parameters
Operating System Support	Windows XP, Windows Server 2003, Windows Vista, Windows Server 2008, Windows Server 2012, Windows 7, Windows 8 and Linux support (audio support*) See www.datapath.co.uk for updates.
Power Requirements	Max current at 12V – 0.5A Max current at 3.3V – 0.2A Thermal dissipation – 6.5W
Operating Temperature	0 to 35 °C (32 to 96°F)
Storage Temperature	-20 to 70 °C (-4 to 158°F)
Relative Humidity	5% to 90% non-condensing
Warranty	3 years

We are continuously developing the technology used within our product ranges delivering outstanding innovative solutions, therefore the specification may change from time to time.