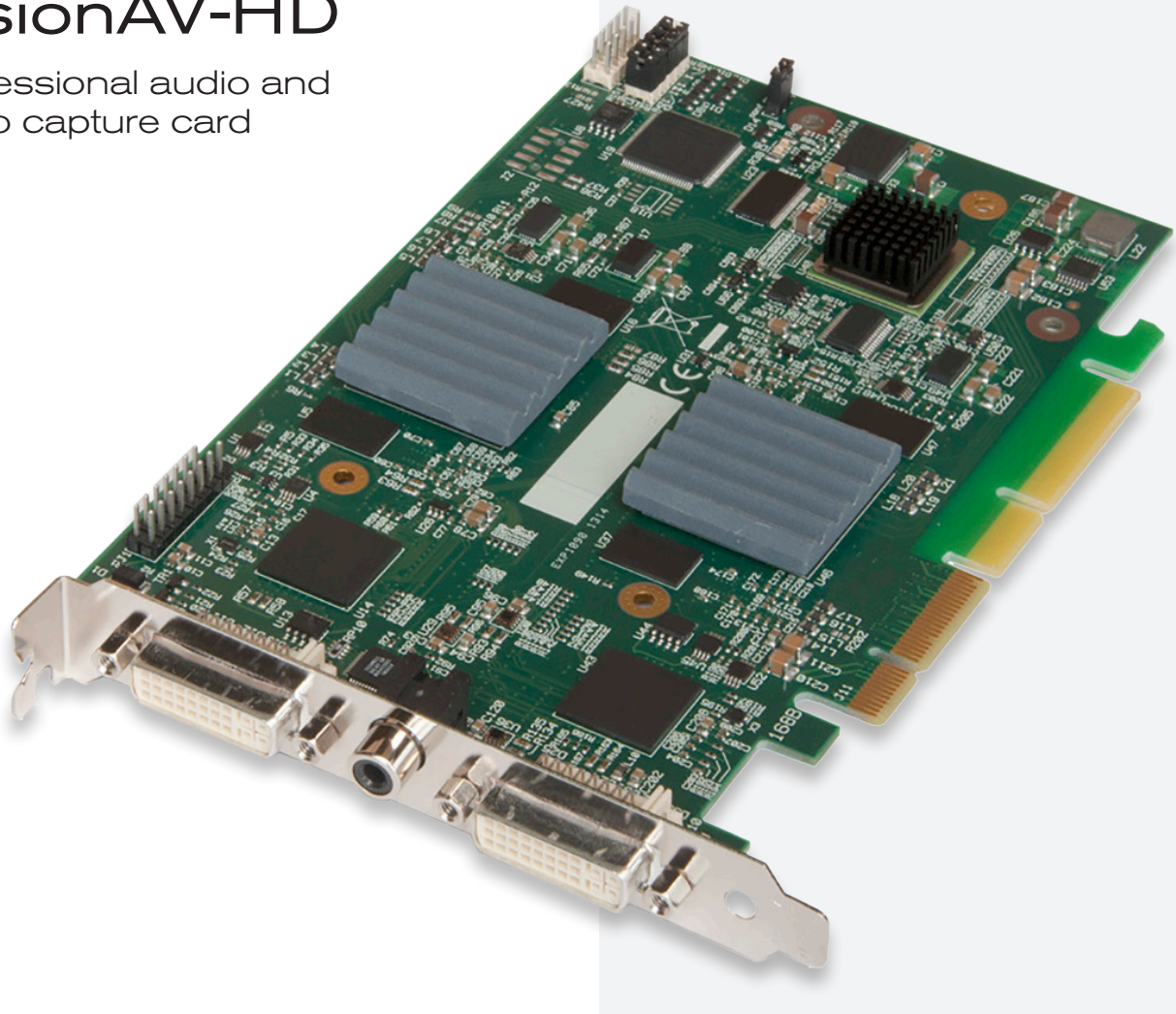# VisionAV-HD

Professional audio and video capture card

HIGH PERFORMANCE CARD

The VisionAV-HD has three independen video capture inputs - two supporting High Definition capture and a third supporting Standard Definition composite video. The VisionAV-HD also adds multiple channels of audio capture, which can be synchronised in software using time stamping with all video capture channels.

Both DVI High Definition inputs support HDMI, DVI, RGB and Analog Component (YPbPr) input via a DVI-I connector*, at resolutions up to 4096 x 4096 pixels and supports 1080p (1920 x 1080) at 6o frames per second.

The VisionAV-HD captures all three video channels simultaneously and triple buffers them into onboard storage for tear free video, alongside an audio stream that can be selected from one of 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

- 4 Lane PCIe bus, Net 1.6 GB/s total capture bandwidth
- Frame buffer memory - 2 x 256MB
- Direct DMA to graphics memory of third party graphics cards
- Balanced (XLR) and Unbalanced (RCA) audio capture from optional audio module (AM2)
- Datapath Linux driver supports common Linux distributions (audio support)

Two DVI-I capture channels

- HDMI/DVI/RGB/YPbPr video capture
- HDMI embedded audio capture and streaming

SD/composite capture channel

- PAL, NTSC, SECAM up to 720 x 576 at 16 Bit colour

Engineering the **world's best** visual solutions

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VIDEO STREAMING

DirectShow drivers for WDM Streaming driver supports the following applications, to encode, record and stream video over networks or the Internet:

- Microsoft Media Encoder®
- VLC
- VirtualDub
- Any other DirectShow encoding software

For streaming applications, the VisionAV-HD can be used with Windows Media Encoder to compress and stream captured video. To replay the video, use Windows® Media Player.

Any application compatible with Windows DirectShow technology can use the VisionAV-HD due to it built-in WDM support.

AUDIO FEATURES

- Flexible input/output mixing capabilities
- Supports audio capture to the PCI Express bus at popular sample rates from 44.1 to 96k samples/s at 16 bits/sample
- Playback and mixing of HDMI embedded audio

Input and output connection via the Audio Breakout Cable which is supplied with the optional AM2 audio module 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

To see our full range of Vision Features, please visit our product section on our website **www.datapath.co.uk**.

SOFTWARE CAPABILITIES

Timestamp support for streaming synchronisation

- Synchronisation of multiple inputs across multiple cards
- Synchronise systems using network clock synchronisation
- 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

Datapath Unified Vision Driver

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

COMPATIBILITY

The VisionAV is supported by the following operating systems: Linux, Windows® XP, Windows Vista, Windows Server 2003, Windows Server 2008, Windows 7, Windows 8/8.1 and Windows 10.

Datapath SDK is included for software developers.

Advanced graphics display technology

SPECIFICATION

BOARD FORMAT
PCI Express x4 half size plug-in card,
110mm x 170mm

CONNECTORS (MAIN BOARD)
2 x DVI-I , 1 x RCA (female)

HDMI CAPTURE
Supports HDMI 1.3 to 225MHz (including deep colour modes)
For HDCP support, contact the Sales Department 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 overhead)

VIDEO PROCESSING
Polyphase FIR scaling engine (7 x 5) 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
16 independent DMA streams any mix of HD and SD sources, colour space, cropping and scaling parameters

POWER REQUIREMENTS
Max current at 12V – 1A
Max current at 3.3V – 1A
Thermal dissipation – 15.5W

OPERATING TEMPERATURE
0 ºC to 35 ºC / 32 ºF to 96 ºF

STORAGE TEMPERATURE
-20 ºC to 70 ºC / -4 ºF to 158 ºF

RELATIVE HUMIDITY
5% to 90% non-condensing

WARRANTY
3 years

MODELS AVAILABLE

Order Code: VisionAV-HD
HDMI/ DVI/ RGB/ YPbPr/ SD/ Composite video capture card

* Adapters for other types of video connectors such as DVI/HDMI, DVI/VGA or DVI/Component are not included with the VisionAV-HD but are available from Datapath, contact our Sales team for details.

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

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