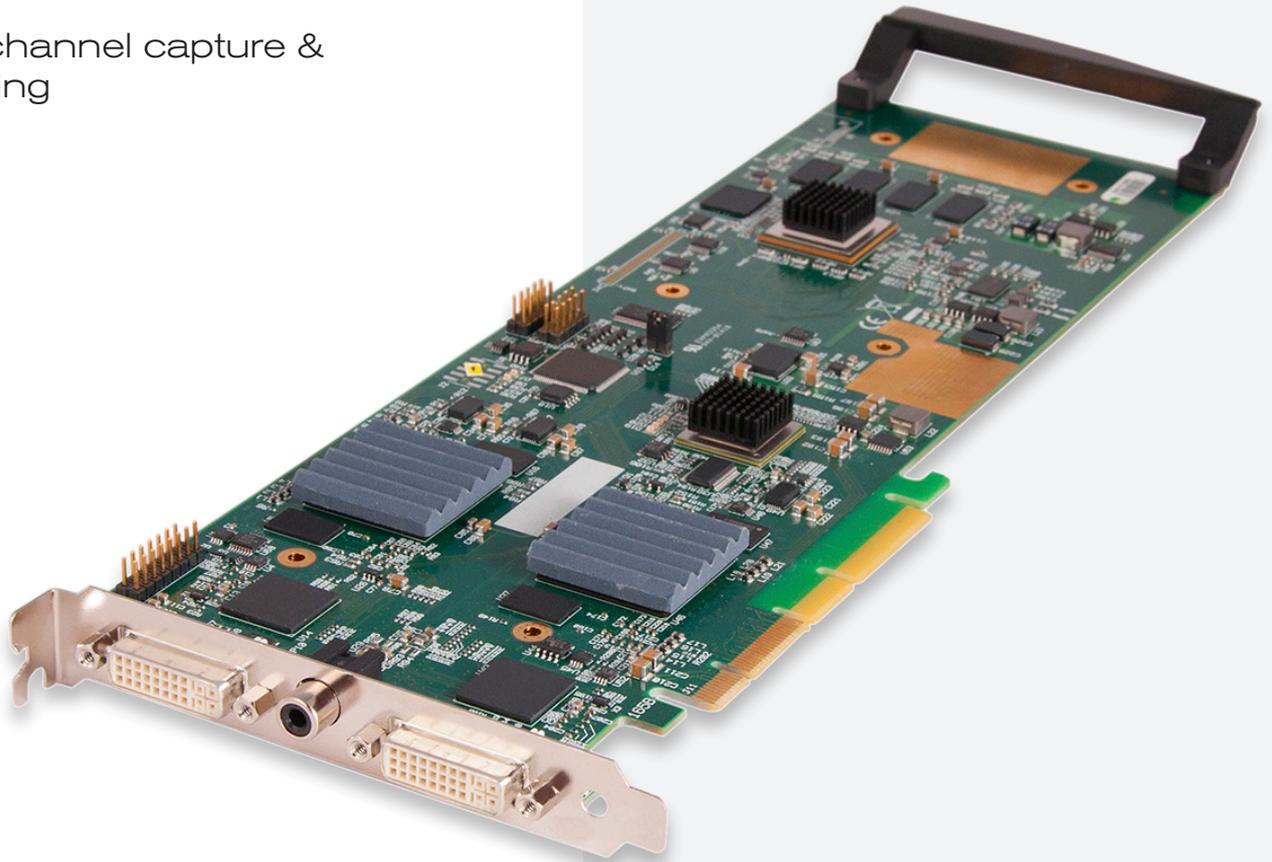# VisionHD2-SQX

Triple channel capture & encoding

HIGH PERFORMANCE ENCODING

Capturing and encoding video for digital streaming or storage is a key requirement for the professional AV market. Users need to capture video and not only send the data to the screen but transport compressed video to online resources such as storage locations for remote access or later retrieval.

The Datapath VisionHD2-SQX is an advanced video capture card with SQX technology that allows captured video to be additionally encoded into H.264.

Featuring three independent capture channels, the VisionHD2-SQX allows users to capture two High Definition 1920 x 1200p video feeds and directly encode them into H.264 using the dedicated SQX processor. Each encoded video can be configured by the SQX media server for distribution over a network. In addition, raw video can be captured, rapidly transferred to graphics hardware or system buffers for viewing or further processing.

DATAPATH SQX TECHNOLOGIES

Datapath's SQX encoding technology uses the global H.264 standard for video compression. Multiple streams of captured video can be simultaneously encoded and streamed to different locations. The VisionHD2-SQX can capture two 1920 x 1200 inputs, the encoding engine can encode one channel at 60fps or both at 30fps, allowing one stream to be broadcast over the network and another to be stored to disk.

A single stream can be distributed to any number of network locations all configured through a media server. VisionHD2-SQX provides all features of the Vision capture card including No Signal and Mode Change support. Both features help provide a seamless stream of data to the end point. When a video signal disconnected, No Signal frames are generated and encoded at the current requested resolution, upon a Mode Change, input frames are scaled up or down to maintain the originally requested encode resolution.

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

DATAPATH
EXCELLENCE BY DESIGN

Advanced capture & compression technology

RGBEASY SDK

The RGBEasy SDK allows users to manage both the Vision capture engine and on-board encoding processor.

The RGBEasy SDK, when used with the VisionHD2-SQX, includes example code to achieve the following:

- Save input captures as H.264 video to disk
- Connect to Unicast & Multicast RTSP URIs for streaming H.264 video across a network

Using the SDK, users are able to specify encoding parameters such as H.264 level, profile, bit-rate and key frame interval. Full details are available at **www.datapath.co.uk**.

COMPATIBILITY

The VisionHD2-SQX is supported by the following operating systems: Windows Vista / 7 / 8 / 8.1/10 and Windows Server 2003 / 2008 / 2012.

Datapath SDK is included for software developers.

SPECIFICATION

BOARD FORMAT
PCIe x8 plug-in card

CONNECTORS
Three channel input: 2 x DVI-I, 1 x RCA (female)

HDMI CAPTURE/ENCODE
Support HDMI 1.3 to 225MHz HDMI, PCM audio capture
TMDS equalizer for 20m cable support

DVI CAPTURE/ENCODE
Supports DVI 1.0 RGB 24bit capture to 165Mhz
TMDS equalizer for 20m cable support

VGA/YPBPR CAPTURE/ENCODE
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/ENCODE
CCIR601 sampling. PAL, NTSC, SECAM formats with auto detection

AUDIO CAPTURE
Stereo Line-In/Stereo Balanced inputs with programmable gain (+/- 12dB) 16 bit sampling at 44.1/48/96kHz
Digital audio can be captured from both HDMI

channels analog stereo line-out for direct pass-through of selected input at up to 64kHz sampling, sourced from analog input or HDMI channel

VIDEO CAPTURE MEMORY
512MB high bandwidth frame buffer supports triple buffering of HD and SD video. Local storage of complex scatter-gather tables for DMA engine

VIDEO PROCESSING
Polyphase FIR scaling engine (3x3) for hardware down-scaling and up-scaling. Colour space conversion allows captured data to be transferred in any format RGB:
16bit (5-5-5, 5-6-5, 24bit (8-8-8)
or 32bit (8-8-8-alpha)
YUV: 16bit (4:2:2) Mono: 8bit

ENCODER
H.264
Single channel compression 1920 x 1200 60fps
Dual channel compression 1920 x 1200 30fps

H.264 PROFILES
Baseline Profile (BP) / Main Profile (MP)/High Profile (HiP)

H.264 LEVELS
Level 4.1 / Level 4.2

MAX VIDEO CODING BIT RATE
BP/MP 50,000kbps / HiP 62,500kbps

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 per HD channel including any mix of HD and SD sources, colour space, cropping and scaling parameters

POWER REQUIREMENTS
Max power ≈ 18W

OPERATING TEMPERATURE
0 to 35 ℃ / 32 to 96 ℉

STORAGE TEMPERATURE
-20 to 70 ℃ / -4 to 158 ℉

RELATIVE HUMIDITY
5% to 90% non-condensing

WARRANTY
3 years

MODELS AVAILABLE

Order Code: VisionHD2-SQX
Triple channel encoding and decoding card

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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