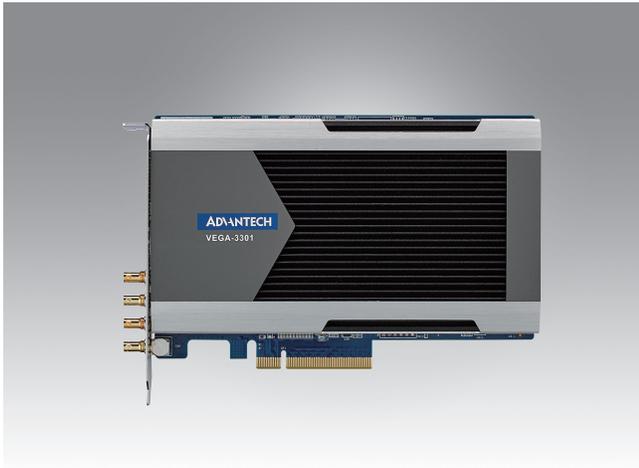


VEGA-3301

4Kp60 HEVC Broadcast Video Encoder Card



Features

- 1-ch 4K (2160p) or 4-ch FHD (1080p) @ 60 fps real-time encoding in Main 8, Main 10 or Main 10 4:2:2 modes
- Less than 35W power consumption
- 4K video capture over built-in HDMI 2.0, Display Port 1.2 or 4-ch SDI-3G video inputs
- Simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks

Introduction

VEGA-3301 enables real-time 4K UltraHD (2160p60) HEVC encoding at up to 20x less power consumption than a software-only solution. The HEVC/H.265 codec is gaining momentum because it reduces bit rates by approximately 50% when compared to an equivalent quality video stream encoded using H.264, enabling more channels or higher resolution video delivery over the same infrastructure. It is particularly relevant for 4K UltraHD transmission which requires a much higher stream capacity. These improvements are achieved at the penalty of much higher computation complexity, with up to four general purpose server class processors required to perform a 4K 60fps software-based broadcast quality HEVC encoding in real time.

VEGA-3301 is tailored for professional media processing and are capable of performing professional grade 4Kp60 Main10 profile HEVC encoding at less than 35W power consumption. The VEGA-3301 adapter additionally features 4K video capture over built-in HDMI 2.0, Display Port or 4-ch SDI-3G video inputs for acquisition-based encoding in contribution workflows. This card feature a simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks to streamline product development and their integration into existing applications.

Specification

Video Input	Channels	1 (up to 4Kp60, 8bit/10bit, YUV) / 4 (up to 1080p60, 8bit/10bit, YUV)	
	Video Formats	4K, HD, SD	
	Frame Rate	HDMI 2.0 / Display Port 1.2 Interface*	4K / 3840x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1920x1080: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1280x720: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p
		BNC (3G-SDI) Interface	4K / 3840x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1920x1080: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1280x720: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p
		PCI Express Interface	4K / 4096x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 4K / 3840x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1920x1080: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1280x720: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 720x480: 60p / 59.94p
	Chroma Sampling Format	4:2:2 / 4:2:0	
Interfaces	PCI express Gen2 x8 / HDMI 2.0 / SDI-3G / Display Port 1.2		
Video Compression	Compression	H.265	
	HEVC Profile	Main / Main 10	
	HEVC Tier	Main / High	
	HEVC Level	1.0 / 2.0 / 2.1 / 3.0 / 3.1 / 4.0 / 4.1 / 5.0 / 5.1	
	Bitrate 4K format	3 Mbps ~ 300 Mbps	
	Bit Depth	8 / 10	
	Bit Rate Control	CBR / VBR	
	Elementary Stream	Yes	

Specifications (Cont.)

Audio	Channels	4
	Format	PCM
	Operation Mode	Stereo
	Sampling Frequency	48Khz
	Sampling Bit Depth	16-bit
	Connectors	HDMI 2.0 / SDI-3G / Display Port 1.2
Feature	Frame rate and resolution control	Yes
	Encoding control and manipulation	Yes
	Full-feature API available	Yes
	Dual encoding (4 file from a unique video source)	Yes
	GOP definition	I, IP, IPB, IBBB
	Ancillary data and VBI	Yes
	Operating System	Windows 8 & 8.1(64-bit), Windows 7(64-bit) Windows Server 2012 & 2012 R2 (64-bit), Windows Server 2008 R2 (64-bit) Linux Kernel 3.13.0 (64-bit)
Development Kits	FFmpeg, Microsoft DirectShow	
Physical Characteristic	Power Consumption	< 35W
	Dimensions	PCI Express Half Length Full Height 167.65 x 111.15 mm

*Output: Auto scale to 4K/3840x2160p60

Ordering Information

Part Number	Description
VEGA-3301E	4Kp60 HEVC Broadcast Video Encoder Card (M31)
VEGA-3301-A0E0	4Kp60 HEVC Broadcast Video Encoder Card (file base)