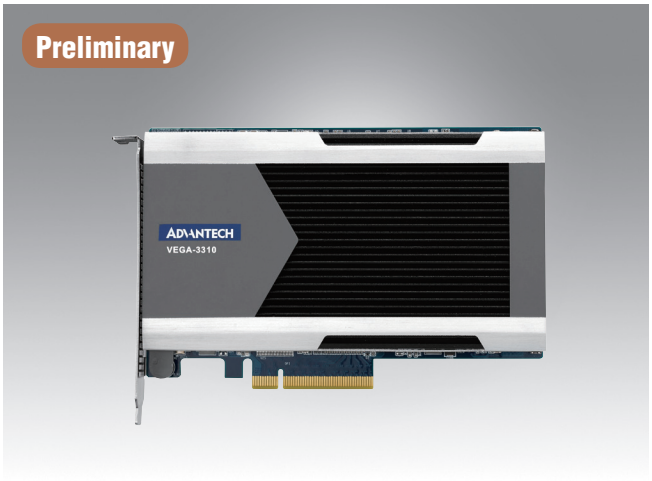
VEGA-3310

4K HEVC Broadcast Video Encoding/ Decoding / Transcoding Card



Features

- 1-ch 4Kp120 or 2-ch 4Kp60 or 8-ch 1080p60 real-time 4:2:2 10bit HEVC, AVC & MPEG-2 encode & decode
- 1-ch 4Kp60 or 4-ch 1080p60 real-time HEVC, AVC & MPEG-2 transcode
- HFR (High Frame Rate, 4Kp120)
- Ultra-low latency support
- Less than 35W power consumption
- Simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks

Introduction

VEGA-3310 is a high performance video processing accelerator card supporting professional grade 4K/UHD encoding, decoding and transcoding at a very low power consumption. It allows these features to be added to systems that support a standard PCI Express architecture such as PC/IT server based video applications.
The technology underlying VEGA-3310 is the latest encoding/decoding SoC. Each device supports HEVC, AVC, and MPEG2 real-time encoding, decoding, and transcoding at up to 4Kp60 with 10 bit colour depth and 4:2:2 chroma sampling. HEVC compression is particularly relevant for 4K UltraHD transmission which requires a much higher stream capacity. These bandwidth reduction improvements are achieved at the penalty of much higher computation complexity, with two general purpose server class processors required to perform a 4K 60fps software-based broadcast quality HEVC encoding in real time. The technology behind VEGA-3310 can do the same task in under 35W, and VEGA-3310 can also support up to 4Kp120 high frame rate for next generation sports broadcasts and 360 degree VR applications..
This card feature a simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks to streamline product development and integration into existing applications.

Specification

File Based Video Input (PCI Express)	Video Encoding	H.265/HEVC	Resolution (x1ch)	3840x2160 /1920x1080 / 1280x720 /720x480
			Resolution (Multi-channel more than x2ch)	1920x1080 /1280x720 /720x480
			Frame rate/Scan mode	60p/59.94p/50p/30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8, 10 bits
			8-bit encoding from 10-bit raw data	Supported
			Chroma Sampling	4:2:0 / 4:2:2
			Rate control	CBR / VBR / Capped VBR
			GOP length	One Picture (I only) / 0.5sec / 1 sec
			GOP structure	I picture only / IPPP /IBB/IBBB/IBBBBBB (Hierarchical GOP:supported) / Closed GOP/ Open GOP / Temporal ID on/off for hierarchical GOP / Scene change / Adaptive GOP
			CPB delay control	3s, 1s, 0.5s
			Filter	Fixed strength
			Low latency	5,6 frame (with IPPPP)
			Ultra low-latency	< 1 frame
		H.264/AVC	Resolution (x1ch)	3840x2160 /1920x1080 / 1280x720 /720x480
			Resolution (Multi-channel more than x2ch)	1920x1080 /1280x720 /720x480
			Frame rate/Scan mode	60p/59.94p/50p/30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8, 10 bits
			8-bit encoding from 10-bit raw data	Supported
			Chroma Sampling	4:2:0 / 4:2:2
			Rate control	CBR / VBR / Capped VBR
			GOP length	One Picture (I only) / 0.5sec / 1 sec
			GOP structure	I picture only / IPPP /IBB/IBBB / Closed GOP/ Open GOP / Scene change / Adaptive GOP
			CPB delay control	1s, 0.5s
			Filter	De-blocking filter / Fixed strength
			Low latency	5,6 frame (with IPPPP)

Specifications (Cont.)

File Based Video Input (PCI Express)	Video Encoding	MPEG-2	Resolution (x1ch)	1920x1080 / 1280x720 /720x480
			Resolution (Multi-channel more than x2ch)	1920x1080 /1280x720 /720x480
			Frame rate/Scan mode	30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8 bits
			Chroma Sampling	4:2:0
			Rate control	CBR
			GOP length	One Picture (I only) / 0.5sec / 1 sec
			GOP structure	I picture only / IPPP /IBB / Closed GOP/Open GOP / Scene change / Adaptive GOP
	Video Decoding	H.265/HEVC	Resolution (x1ch)	3840x2160 /1920x1080 / 1280x720 /720x480
			Frame rate/Scan mode	60p/59.94p/50p/30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8, 10 bits
			Chroma Sampling	4:2:0 / 4:2:2
		H.264/AVC	Resolution (x1ch)	3840x2160 /1920x1080 / 1280x720 /720x480
			Frame rate/Scan mode	60p/59.94p/50p/30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8, 10 bits
			Chroma Sampling	4:2:0 / 4:2:2
		MPEG-2	Resolution (x1ch)	1920x1080 / 1280x720 /720x480
			Frame rate/Scan mode	30p/29.97p/25p/24p / 59.94i/50i
			Bit depth	8 bits
			Chroma Sampling	4:2:0
	Audio Encoding	Control	Single ch	Supported
	Audio Decoding	Control	Single ch	Supported
Feature		Operating System	Windows Server 2012 & 2012 R2 (64-bit), Windows Server 2008 R2 (64-bit) / Linux Kernel 3.13.0 (32-bit, 64-bit)	
		Development Kits	FFmpeg, Microsoft DirectShow	
Physical Characteristic		Video Input/Output Interfaces	PCI express Gen3 x8	
		Power Consumption	<35W	
		Dimensions	PCI Express Half Length Full Height / 167.65 x 111.15 mm	
Environmental		Operating Temperature	-10 to 70 degrees Celsius	
		Non-operating Temperature	-40 to 85 degrees Celsius	
		Operating Humidity	50 to 95% (non-condensing)	
		Non-operating Humidity	50 to 95% (non-condensing)	

Ordering Information

Part number	Description
VEGA-3310E	4Kp120 HEVC Broadcast Video Encoding / Decoding Card (M30)