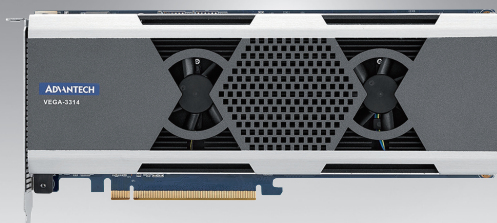


VEGA-3314

4-ch 4K HEVC/AVC/MPEG2 Broadcast Video Encoding/Decoding / Transcoding Card

Preliminary



Features

- 4-ch 4Kp60 or 16-ch 1080p60 real-time 4:2:2 10bit HEVC, AVC & MPEG-2 encode & decode
- Ultra-low latency support
- Less than 35W power consumption
- Simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks

Introduction

VEGA-3314 is the world's first commercial-off-the-shelf video processing accelerator able to perform professional-grade real-time transcoding of four 4K resolution video streams in an ultra-low-power and easy-to-integrate PCI Express format. It integrates eight SoCs supporting UHD, HD and SD formats and HEVC, AVC and MPEG-2 codecs including 10-bit profiles and 4:2:2 chroma subsampling.

The VEGA-3314 unrivalled performance can be leveraged by a wide range of cloud applications. It supports both encoding and transcoding workflows while the bit rate can be configured from 3Mbps to more than 600Mbps per 4Kp60 HEVC encoded stream to serve a great variety of video delivery scenarios. Its double height board profile is compatible with professional GPU-ready slots. The VEGA-3314 also features an on-board video sharing capability which, coupled with scaling features, allow multiple OTT target profiles to be generated from a single encoded 4K video input stream.

This card features 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 | Channels | 4 (up to 4Kp60, 8bit/10bit, YUV) / 16 (up to 1080p60, 8bit/10bit, YUV) |
| | | | 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 / Capped VBR |
| | | | GOP structure | I picture only / IPPP /IBB / Closed GOP/Open GOP / Adaptive GOP (Scene change) |
| | | | CPB delay control | 3s, 1s, 0.5s |
| | | | Filter | De-blocking filter / Fixed strength |
| | | | Low latency | 5,6 frame (GOP = IBBB) |
| | | | Ultra low-latency | < 1 frame |
| | | | HDR | Supported |
| | | H.264/AVC | Channels | 4 (up to 4Kp60, 8bit/10bit, YUV) / 16 (up to 1080p60, 8bit/10bit, YUV) |
| | | | 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 / Capped VBR |
| | | | GOP structure | I picture only / IPPP /IBB/IBBB / Closed GOP/ Open GOP / Adaptive GOP (Scene change) |
| | | | CPB delay control | 1s, 0.5s |
| | | | Filter | De-blocking filter / Fixed strength |
| | | | Low latency | 5,6 frame (GOP = IPPP) |
| | | | | |

Specifications (Cont.)

| | | | | |
|--------------------------------------|--|--|----------------------|---|
| File Based Video Input (PCI Express) | Video Decoding | H.265/HEVC | Channels | 4 (up to 4Kp60, 8bit/10bit, YUV) / 8 (up to 1080p60, 8bit/10bit, YUV) |
| | | | 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 | Channels | 4 (up to 4Kp60, 8bit/10bit, YUV) / 8 (up to 1080p60, 8bit/10bit, YUV) |
| | | | 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 | Channels | 8 (up to 1080i60, 8bit/10bit, YUV) |
| | | | Resolution (x1ch) | 1920x1080 / 1280x720 / 720x480 |
| | | | Frame rate/Scan mode | 60p/59.94p/50p(up to 720p), 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 |
| | Video Transcoding (PCIe in / PCIe out) | N:N | HEVC to HEVC | Supported |
| | | | HEVC to AVC | Supported |
| | | | AVC to HEVC | Supported |
| | | | AVC to AVC | Supported |
| | | | MPEG2 to HEVC | Supported |
| | | | MPEG2 to AVC | Supported |
| | | N:M | HEVC to HEVC | Supported |
| | | | HEVC to AVC | Supported |
| | | | AVC to HEVC | Supported |
| | | | AVC to AVC | Supported |
| | | | MPEG2 to HEVC | Supported |
| | | | MPEG2 to AVC | Supported |
| Feature | Operating System | Windows Server 2012 & 2012 R2 (64-bit), Windows Server 2008 R2 (64-bit) / Linux Kernel 3.13.0 (64-bit) | | |
| | Development Kits | Ffmpeg 3.4.1, Microsoft DirectShow | | |
| | Streaming Protocol (input) | RTSP/RTMP/RTP/TS over IP (UDP)/HTTP | | |
| | Streaming Protocol (output) | RTSP/RTMP/RTP/TS over IP (UDP)/HTTP | | |
| | System Application | WEB GUI | | |
| Physical Characteristic | Video Input/Output Interfaces | PCI express Gen3 x16 | | |
| | Power Consumption | <35W | | |
| | Dimensions | PCI Express 105" Length Full Height, single-deck / 266.7 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-3314-A0T0 | 4-ch 4K HEVC/AVC Real-time Encoding & Decoding Card |

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