

VEGA-2002

4K UHD H.265/H.264 Real-Time Encoder and Streaming Module

Preliminary



Features

- 4Kp60 audio/video capture over built in 4 x 3G -SDI or 1 x 12G(3G)-SDI or HDMI 2.0 inputs
- Real-time 4Kp60 H.264/H.265 8/10-bit encode
- Streaming output via Gigabit Ethernet or USB wireless dongle
- Video Record to USB Storage
- WIFI and LTE dongle support by USB
- Small form-factor (90x100 mm2) and low power consumption for easy adoption in portable applications
- Build-in Remote control UI and CGI command support for easy management and development

Introduction

With more and more viewers turning to online video, new concepts such as social media and anywhere broadcasting are gaining popularity among video professionals. The VEGA-2002 helps leveraging the ubiquity of mobile networks and the flexibility of over-the-top delivery without jeopardizing video quality by providing a professional-grade 4K HEVC engine that can be easily integrated into portable broadcasting solutions. The VEGA-2002 is a powerful tool that opens new online media opportunities enabling live event streaming even in the most challenging scenarios where a traditional outside broadcasting setup is not feasible.

The VEGA-2002 is a small, low power, real-time encoding module based on Ambarella's video compression technology which supports UHD resolution and HEVC and AVC codecs. It features 4K video acquisition through built-in SDI or HDMI inputs and encoded video can be streamed to mobile or Wi-Fi networks by connecting an USB wireless adapter. The VEGA-2002 can create multiple output streams from a single video input and encode each one using different codecs with different parameters.

The VEGA-2002 offers a user-friendly HTTP interface and can be remotely controlled using a web-based CGI interface. It supports streaming protocols commonly used by CDNs, making it easier for users to deliver video over-the-top.

Specification



	VEGA-2002 3G-SDI/HDMI	VEGA-2002 4X3G-SDI	VEGA-2002 12G-SDI/HDMI
Channels/interface	1 x 3G-SDI or HDMI 2.0, up to 4Kp60 8/10 bit 4:2:2	4 x 3G-SDI, up to 4Kp60 8/10 bit 4:2:2	1 x 12G-SDI or HDMI2.0, up to 4Kp60 8/10 bit 4:2:2
Video Input Format	HDMI 2.0 Interface 3840x2160: 60p/59.94p/ 50p/30p /29.97p/25p 1920x1080: 60p/59.94p/50p/30p/29.97p/25p/24p 1920x1080: 60i/59.94i/50i 1280x720: 60p/59.94p/50p	BNC (3GS-SDI) Interface 3840x2160: 60P/59.94p/50p/30p/29.97p 1920x1080: 60p/59.94p/50p/30p/29.97p/25p 1280x720: 60i/59.94i/50i	HDMI 2.0 Interface 3840x2160: 60p/59.94p/ 50p/30p /29.97p/25p 1920x1080: 60p/59.94p/50p/30p/29.97p/25p/24p 1920x1080: 60i/59.94i/50i 1280x720: 60p/59.94p/50p
	BNC (3GS-SDI) Interface 1920x1080: 60p/59.94p/50p/30p/29.97p/25p 1920x1080: 60i/59.94i/50i 1280x720: 60p/59.94p/50p/30p/29.97p/25p	1920x1080: 60i/59.94i/50i 1280x720: 60p/59.94p/50p/30p/29.97p/25p (Note: 3840x2160 support by 4 x 3G-SDI Quad Link)	BNC (12G-SDI) Interface 3840x2160: 60P/59.94p/50p/30p/29.97p 1920x1080: 60p/59.94p/50p/30p/29.97p/25p 1920x1080: 60i/59.94i/50i 1280x720: 60p/59.94p/50p/30p/29.97p/25p

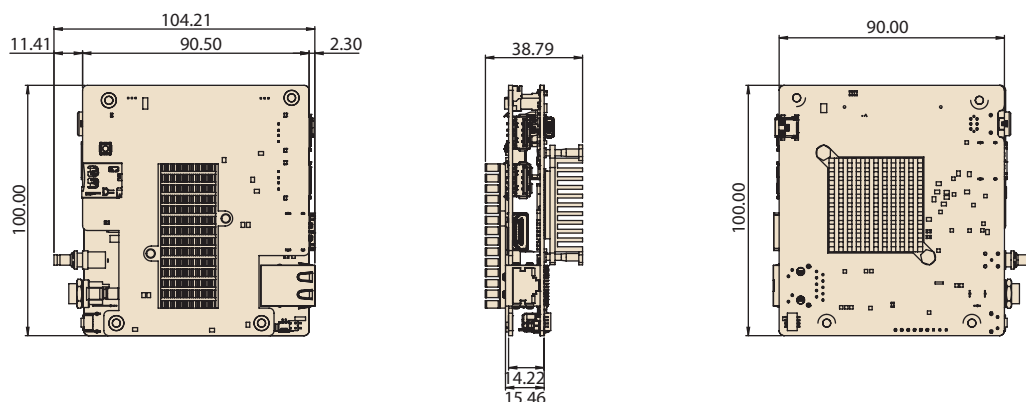
Specifications (Cont.)

Video Compression	Compression	HEVC (H.265) / AVC (H.264) up to 4Kp60		
	AVC or HEVC profile	AVC BP/MP/HP Level 5.1 HEVC Main Level 5.1		
	HEVC Tier	Main		
	Bitrate in 4K format	64kbps~32Mbps		
	Bit Depth	8/10 bit		
	Chroma Sampling Format	4:2:0		
	Bit Rate Control	CBR		
Audio Input & Compression	Channels	Line-In: stereo 3G-SDI: 4 stereo HDMI: 4 stereo	Line-In: stereo 3G-SDI: 2 stereo	Line-In: stereo 12G(3G)-SDI: 2 stereo HDMI: 2 stereo
	Audio Compressing Format	AAC-LC, AAC-HE, AAC-HEv2		
	Sampling Rates	HDMI/SDI: 44.1/48Khz-16bit Line in: 32/44.1/48Khz-16bit		
Self View	Video Output Frame	PAL		
Video Stream Features	Dynamic Video Stream Resolution Change	Yes		
	Streaming Protocol	RTSP/RTP/RTMP/HLS/TS over IP/SRT/NDI HX2 (option)		
	GOP Definition	I, IP, IPB, IBBP		
	Ancillary Data Capture	Option		
Module Characteristic	Operation System	Embedded Linux		
	Management & Control Interface	Remote from Web GUI interface		
	Power Consumption	Less than 12.5W (Base on 4Kp30 Video Encoding)		
	Power Input	DC12V		
	Module Dimension	(L) x (W) x (H): 90 x 100 x 16 mm		
Environmental	System Dimension	(L) x (W) x (H): 130 x 94 x 48 (mm)		
	Operating Temperature	-10 to 50 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)		

Dimensions

Unit: mm

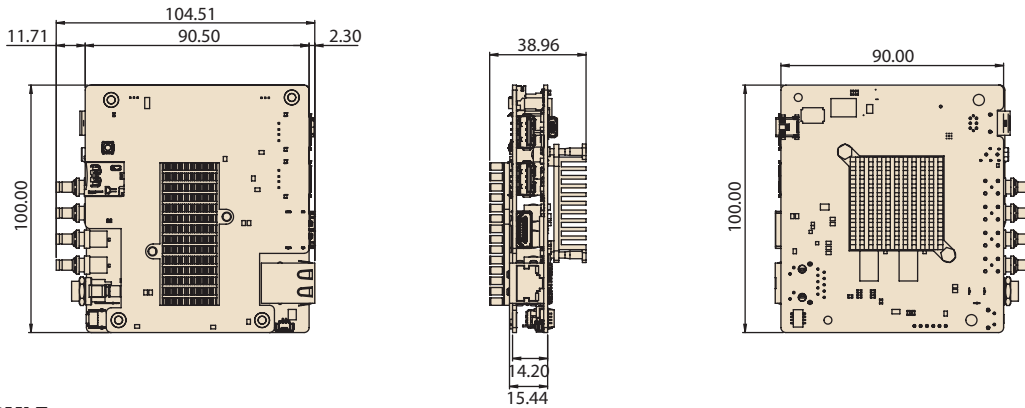
3G-SDI/HDMI Type



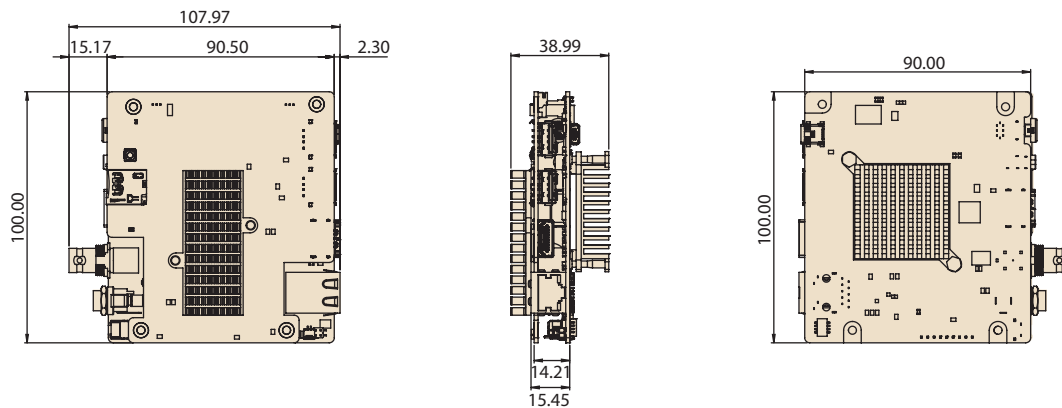
Dimensions

Unit: mm

4X3G SDI Type



12G-SDI/HDMI Type



Ordering Information

System

Part Number	Description
VEGA-2002-12GS	VEGA-2002 H2 Encoder 1 channel 12G-SDI/HDMI 2.0
VEGA-2002-4X3GS	VEGA-2002 H2 Encoder 4 channel 3G-SDI
VEGA-2002-3GS	VEGA-2002 H2 Encoder 1 channel 3G-SDI/HDMI

Board

Part Number	Description
VEGA-2002-12GM	VEGA-2002 H2 Encoder 1 channel 12G-SDI/HDMI 2.0
VEGA-2002-4X3GM	VEGA-2002 H2 Encoder 4 channel 3G-SDI
VEGA-2002-3GM	VEGA-2002 H2 Encoder 1 channel 3G-SDI/HDMI

Optional

Part Number	Description
96PSA-A36W12R1-3	ADP A/D 100-240V 36W 12V C6 DC PLUG 90° 62368
1700001524	Power Cord UL 3P 10A 125V 183cm