

# ULTIMA II™ H.265/IP: 4:2:2

**4K H.265/HEVC mezzanine encoder with 4:2:2 and 4:2:0 support. Inputs are one 12G SDI, or four 3G SDI, or one HDMI 2.0. Accommodates 2160p, 1080p, or 720p inputs. Outputs are IP and ASI. Supports AAC, AC3, and MPEG audio. Designed to pay for itself in less than a year.**



## Features

- 60 fps 4k Ultra HD 3840 x 2160 H.265/HEVC encoder
- Inputs:
  - One 12G HD-SDI input, or
  - Four 3G SDI inputs (SMPTE 424M/425M), or
  - One HDMI v2.0 input
- Simultaneous Outputs:
  - IP – H.265/HEVC Main/High
  - Two mirrored DVB-ASI outputs
- IP output protocols: UDP, RTP, RTSP, MPEG-DASH
- 4:2:2 10-bit encoding at 60/50/59.94 fps
- Audio Encoding:
  - AAC-LC: 2ch, 5.1ch
  - AAC-HE 2ch
  - AC3: 2ch, 5.1ch
  - MPEG-1 Layer II
- Redundant power supply
- Control and monitoring via web browser, front panel, or SNMP
- Works as a 4K Encoder

## Applications

- News, satellite, and sports contribution
- Event streaming via ISPs or CDNs
- Cost effective content distribution over expensive circuits
- Saving money on 4K content delivery

## Overview

H.265 or HEVC is the latest encoding algorithm that is now available to transport video. It is the technological evolution of MPEG -2 and H.264. Economic studies show that utilizing it will often pay for itself in less than one year. Due to lack of content, 4K content distribution has not been widely adopted yet, but H.265 makes perfect sense, particularly across content delivery backbones.

The ULTIMA II is a hardware based encoder that is designed for high end contribution quality encoding. It is targeted at both telcos and broadcasters.

The ULTIMA II works well as a 4K H.265 4:2:2 encoder.



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## Specifications

### Video Inputs

Input Formats:	One 12G HD-SDI input, or Four 3G SDI inputs (SMPTE 424M/425M), or One HDMI v2.0 input
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### Video Encoding

Codec:	H.265/HEVC Main/High (Main 10 @ Level 5.1)
Resolutions:	3840x2160 – one channel (60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p) 1920x1080 (60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p) 1280x720 (60p, 59.94p, 50p)
Chroma Depth:	4:2:0 8/10 bit, 4:2:2 10 bit
Bit Rates:	2 ~ 55 Mbps
Aspect Ratio:	16:9
Latency:	~ One second
Rate Control:	CBR, VBR

### Audio Encoding

Input (LPCM):	5.1ch SMPTE 299M/272M Embedded Audio
Sampling Frequency:	48 kHz
Audio Mix:	4 Stereo (8 channel) or 5.1ch
Codecs:	MPEG-1 Layer II 2ch AAC-LC 2ch, 5.1ch AAC-HE 2ch AC3 2ch, 5.1ch
Bit Rates:	AC3 2ch (128/192/256/384 Kbps), 5.1ch (384/448/640 Kbps) MPEG1 Layer2 64/96/112/128/160/192/224/256/320/384 Kbps AAC_LC 2ch (48 ~ 512 Kbps), 5.1ch (384/448/512/640/768 Kbps) AAC-HE 32 ~ 256 Kbps

### ASI Outputs

Output Stream Type:	MPEG-2 TS (188 bytes)
Outputs:	Two mirrored DVB-ASI outputs
Connectors:	BNC (75Ω)
TS Bit Rate:	~ 60 Mbps

### GOP

GOP Length:	8~248 (8 step)
GOP Structure:	I/PPPP/IBBBBBBBB

### Processing

CTU Size:	64 x 64
CU Size:	64 x 64/32 x 32/16 x 16
Scene Change Detection:	Supported

## Ordering Information

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## Specifications – Continued

### IP TS Outputs

Outputs:	Two ports
Connectors:	RJ-45
Ethernet Type:	10/100/1000 Base-T
Stream Protocols:	MPEG-2 Transport Stream over UDP / RTP / RTSP / MPEG-DASH
Type:	Multicast, Unicast
TS Bit Rate:	~ 60 Mbps


### Ethernet

Outputs:	Two ports
Connector:	RJ-45
Interface Type:	10/100 Base-T
Protocol:	SNMP

### Control and Monitoring

Local:	Front panel operation, LCD display
Remote:	SNMP, HTTP (Web Interface)

### Physical and Power

Power Supply:	AC 90~230 V, 50/60 Hz
Power Consumption:	Max. 100 W
Dimensions – WxHxD:	19 x 1.7 x 15 inches (482 x 44 x 383 mm)
Weight:	8.82 lbs (4 Kg)
Operating Temperature:	14 to 122 °F (-10~50°C)
Conformities:	

## Inputs/Outputs

