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

The ULTIMA works well as a 4K H.265 4:2:2 encoder. But its highest and best use is as a four channel HD HEVC encoder. If you need to deliver multiple 1K mezzanine quality content across considerable distances via H.265 then you should consider this.
## Specifications

### Uncompressed Input

**Physical Layer:**
- 4x 75 Ω BNC
- 12G-SDI: SMPTE ST-2082
- Quad 3G-SDI: SMPTE 425-5 Level A
- 3G-SDI: SMPTE 424M
- HD-SDI: SMPTE 292M

**Supported formats:**
- 3840 x 2160p @ 60 Hz, 59.94 Hz, 50 Hz, 60 Hz, 29.97 Hz, 25 Hz, 24 Hz, 23.976 Hz
- 1920 x 1080p @ 60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz, 25 Hz, 24 Hz, 23.976 Hz
- 1280 x 720p @ 60 Hz, 59.94 Hz, 50 Hz
- 4:2:2 8/10 bit uncompressed input

### Compressed Output

**Compressed Output MPEG-2 TS**
- Physical Layers: DVB-ASI (EN50083-9), 2x 75 Ω BNC Ethernet
- Bit Rates: .0 to 60 mbps

**Video Encoding**
- Codec: H.265/HEVC Main/Main 10 @ Level 5.1
- Resolution: 3840 x 2160p (one channel)
- 1920 x 1080p / 1920 x 1080i / 1280 x 720p (more than 2 channels)
- Pixel Format: 4:2:0 8/10 bit, 4:2:2 10 bit
- Rate Control: CBR
- Latency: 1.5 seconds

**Audio Encoding**
- Input: SMPTE 299M Embedded Audio
- Codecs: AAC audio (AAC LC, HE-AAC v1, and HE-AAC v2)
- Multichannel Encoding: Supports up to 8 channels (stereo and 5.1/7.1 surround)
- Sampling Rate: 48 KHz
- Bit Depths: 16/24 bit

### Rear Inputs/Outputs

- Network: Two RJ45 1 Gigabit Ethernet LAN ports
- Two RJ45 10 Gigabit Ethernet LAN ports
- One RJ45 dedicated IPMI LAN port
- USB: Two USB 3.0 ports
- Video Output: One VGA port

### Front Inputs/Outputs

- Display: 20 x 4 character LCD panel
- Key Buttons: Six push buttons with LED

### System Management

- System Management: Via RJ45 Ethernet LAN port
- Monitoring System Health Status: Via IPMI LAN port

### Power Supply

- Power Supply: Hot-swappable 400W+400W Redundant power supply
- Input Voltage Range: 90-264 VAC
- Input Frequency Range: 47-63 Hz
- Power Consumption: Up to 120W
- Safety (Power Supply only): UL 1950 and cUL c22.2 No.950

### Operating Environment

- Active Cooling: Three temperature-controlled fans
- Operating Temperature: 0°C to 40°C (32°F to 104°F)
- Storage Temperature: -40°C to 70°C (-40°F to 158°F)
- Operating Humidity: 10% to 90% non-condensing
- Electromagnetic Compliance: FCC Part 15 Class A
- CE Mark (EN 55022 / CISPR 22 Class A and EN 55024 / CISPR 24 Class A)

### Physical

- Dimensions – 1 RU: 17.24 x 15.87 x 1.73 inches (without ears) 438 x 403 x 44 mm
- Weight: 17.6 lbs. (8 kg)

## Ordering Information

ULTIMA 4ch H.265/IP: 4:2:2