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ULTRA ENCODE AIO

Rack-mountable
Streaming and Recording Encoder

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Ultra Encode HDMI/SDI、AJA HELO Plus

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01
PART

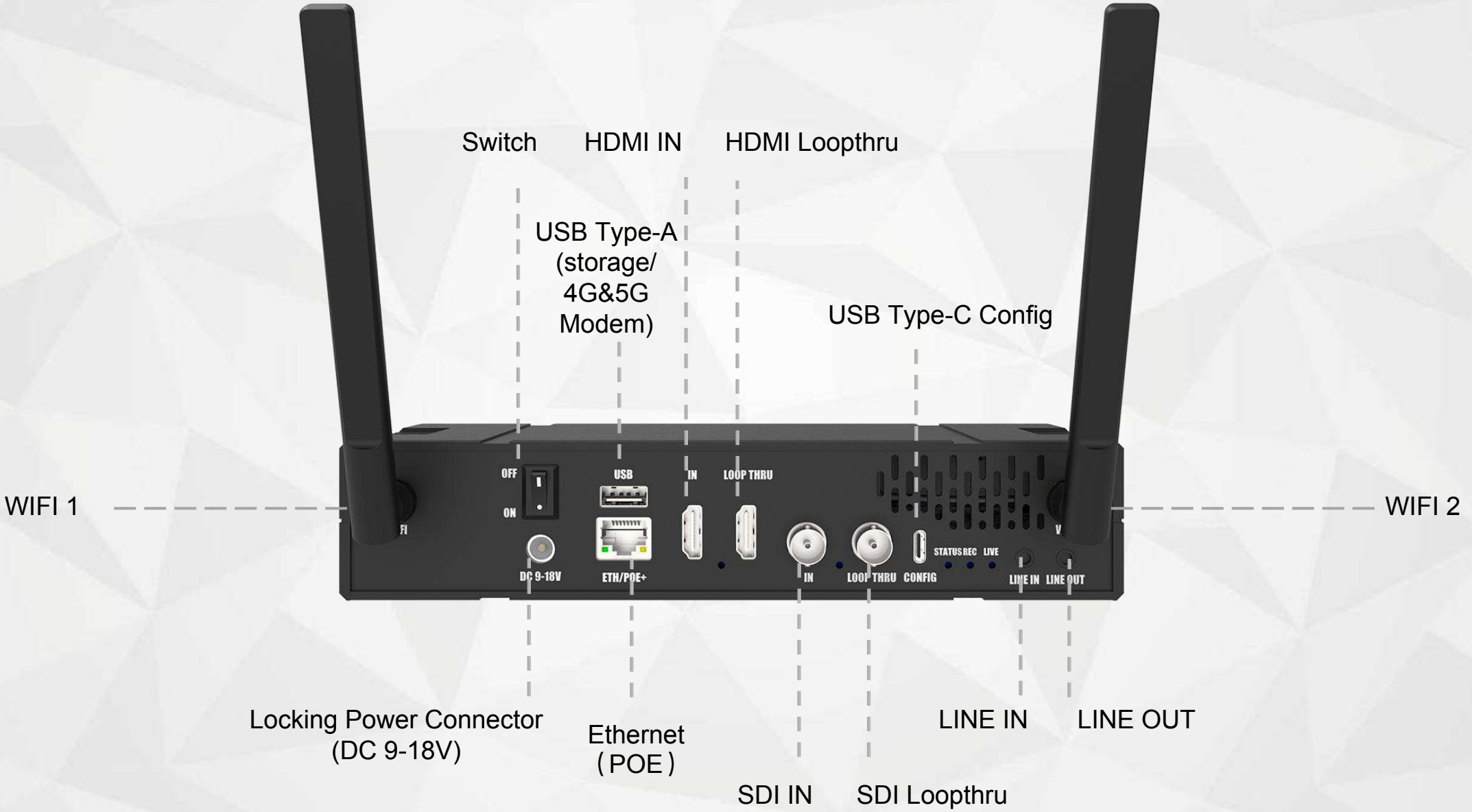
PART ONE
Product First-Impression

Overview

Ultra Encode AIO is a standalone and compact H.264/H.265/NDI|HX encoder for streaming and recording simultaneously. It fits the standard 1RU form factor, allowing two encoders be rack mounted together with supplied mounting hardware for IRU use. Ultra Encode AIO offers both SDI and HDMI I/O with the capability to stream up to 4K30 to 6 streaming destinations. Recording can be made to external SD card, USB storage and NFS/CIFS/SMB network storage. Ultra Encode AIO also provides Picture-In-Picture, Side-By-Side and graphics functionality in hardware for compelling presentations. It is designed for high quality streaming and IP workflows, including sports, education, live event and much more.

Connections

Connections



LCD Touchscreen

Size and Resolution

- 1.9 inch LCD touchscreen
- 320x170 resolution

Display Content

- input signal resolution and bitrates
- audio volume
- recording status
- streaming status
- overall bitrate of Wi-Fi/Ethernet
- Wi-Fi connection
- Ethernet connection

Display Content 1

System Status Monitoring

Display Content 2

Input Signal Preview

*Customer can touch the LCD screen to switch between the display content 1 and display content 2.

1RU Rackmounting

Retainer Plate

Hanger

*Supplied mounting hardware.

Specs Table (brief)

	HDMI I/O	SDI I/O
Max input & loop-through format	4096x2160 30fps 4:4:4/4:2:2 4096x2160 60fps 4:2:0	2048x1080 60fps 4:2:2
Other input & loop-through formats	• 2048x1080p/2048x1080i/1920x1080p/1920x1080i 23.98/24/25/29.97/30/47.95/48/50/59.94/60 • 1280x720p 25/29.97/30/50/59.94/60 • 720x576 25p/50i (PAL SD) • 720x480 29.97p/59.94i (NTSC SD)	
Video codec and encoding parameters	H.264/H.265（HEVC） Max bitrate: 32Mbps	
Audio encoding parameters	8-channel AAC Supported audio bitrates: 256/192/128/96/64/48/32/16 kbps	
Output formats	• 4096x2160p/3840x2160p/2560x1440p30（only supported in HDMI） • 1920x1080p/1280x720p 23.98/24/25/29.97/30/50/59.94/60 • 720x576p25/720x480p30	
Protocols	RTSP/RTMP/RTMPS/SRT Caller/SRT Listener/NDI®|HX2/NDI®|HX 3/HLS（push）/TS over UDP/TS over RTP/TVU ISSP	
Storage	SD card(MP4/MOV), USB storage(MP4/MOV), network storage(NFS/CIFS/SMB)	

02
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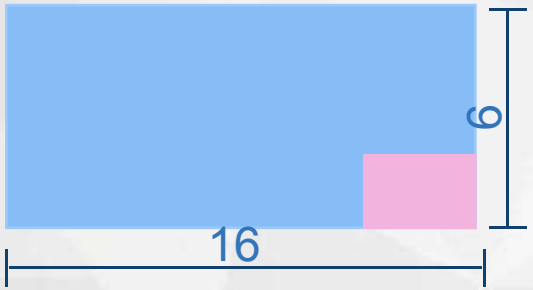
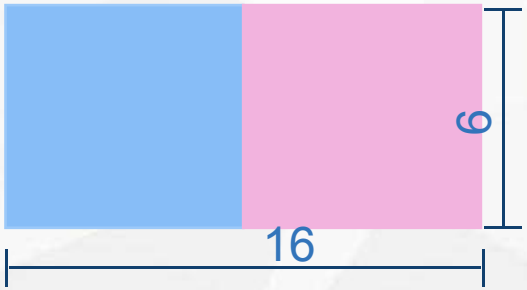
PART TWO
Functional Characteristics

Content Production

Customers can create Picture-in-Picture or Side-by-Side streaming and recording output from multiple input sources. Graphics functionality is also provided to make presentation compelling.



Picture-in-Picture



Side-by-Side

Graphics Functionality
(text, picture, clock)

Streaming

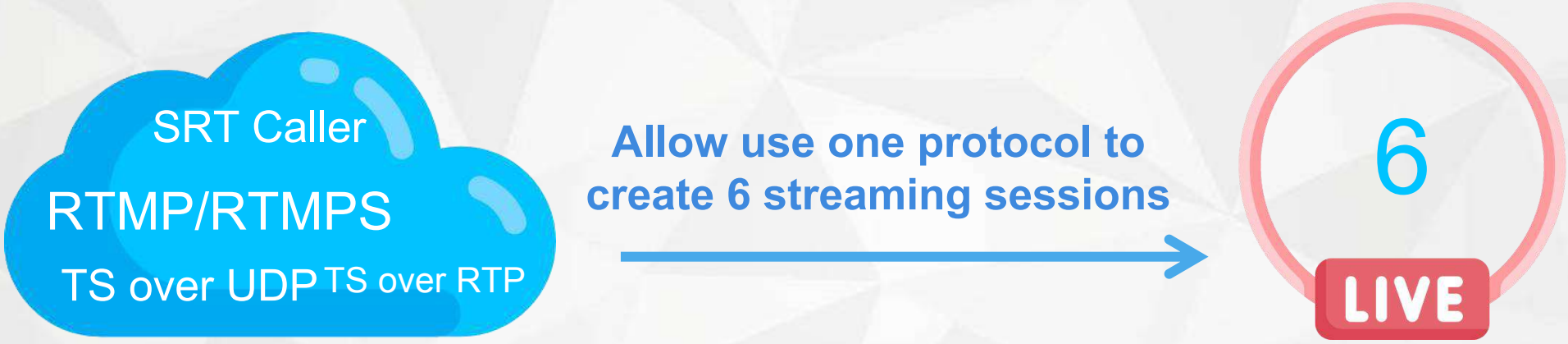
Ultra Encode AIO supports streaming up to 6 separate destinations simultaneously at 32Mbps for each streaming session.

6 destinations simultaneously
32Mbps/each stream

SRT Caller
RTSP
NDI|HX2
RTMP/RTMPS
SRT Listener
HLS(push) TS over RTP
TS over UDP
TVU ISSP

Protocols and sessions

There are differences in the amount of sessions customers can create when applying different streaming protocols in their workflow.



Due to the limitation of account authorization, only 1 session can be streamed to Facebook or Twitch. For example:

Facebookx1+Twitchx1+RTMP/RTMPSx4（**Ture**）
Facebook**x2**+Twitchx1+RTMP/RTMPSx3（False）
Facebookx1+Twitch**x2**+RTMP/RTMPSx3（False）

Protocols and sessions

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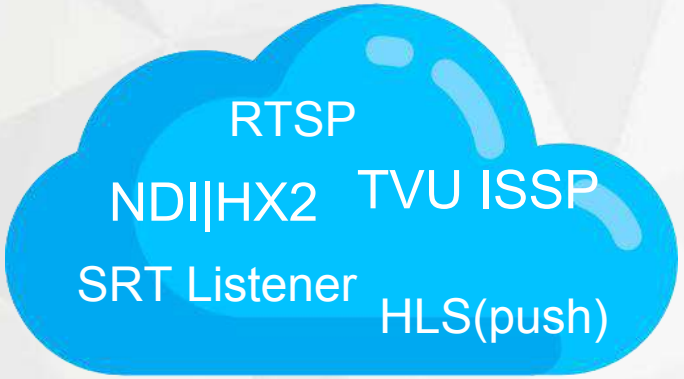
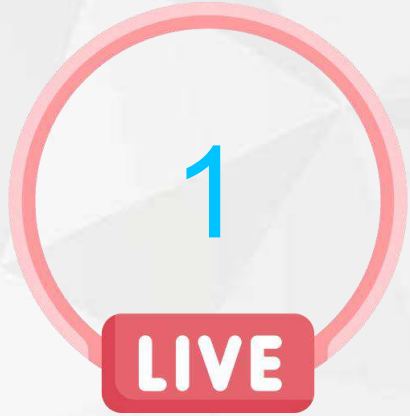


Allow use one protocol to create 1 streaming session



How to apply all the above protocols in one streaming task? For example:

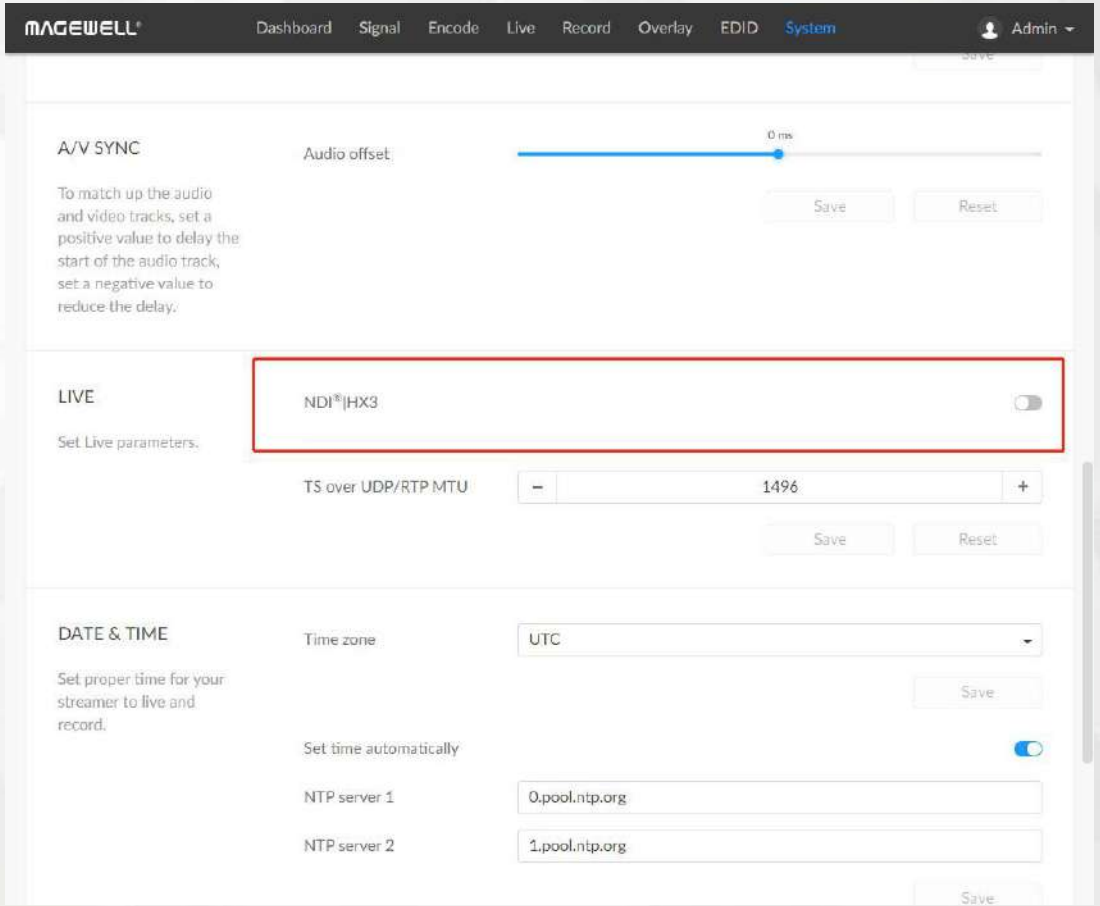
Protocol combination: True

- HLS x1
- SRT Listener x1
- RTSP x1
- NDI HX2 x1
- TVU ISSP x1

- Protocol combination: False
- HLS x 2
- SRT Listener x1
- RTSP x1
- NDI HX2 x1
- TVU ISSP x1

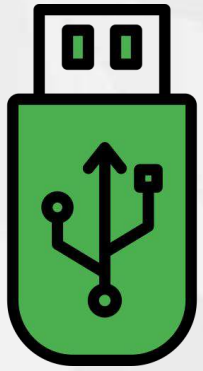
NDI®|HX 3 Compatibility

Ultra Encode AIO supports high-efficiency, low-bandwidth NDI®|HX 3 standard. Customers can manually enable NDI®|HX 3 through Web GUI and send streams at up to 80Mbps. When NDI®|HX 3 is enabled in the device, all other streaming and recording tasks maintain disabled.



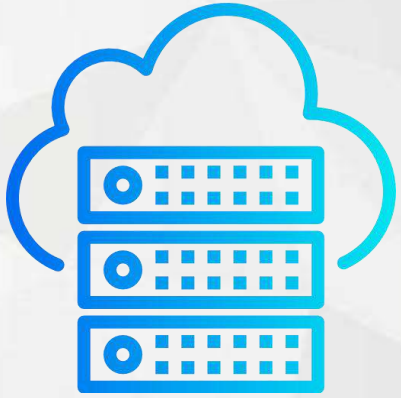
Recording

Ultra Encode AIO supports streaming and recording simultaneously. The recording can be made in 3 ways.



USB storage
(MP4/ MOV)

SD card
(MP4/ MOV)

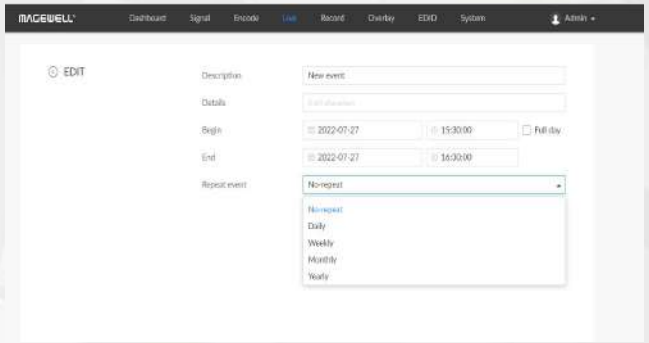


Network storage
(NFS/CIFS/SMB)

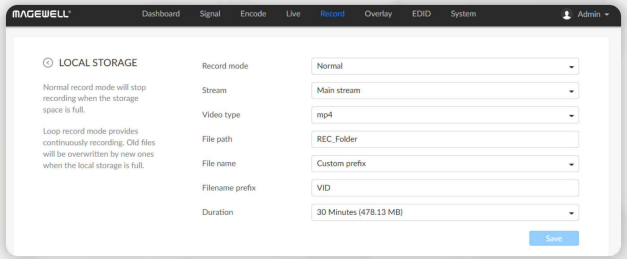
Scheduler

Ultra Encode AIO provides presetting for streaming and recording through scheduler available in Web GUI.

Streaming

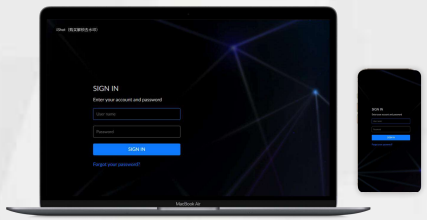


Recording



Device Control

Ultra Encode AIO provides great flexibility for customers to configure, monitor and control the device.



Web GUI
(PC/Smartphone)

Magewell Cloud

Crestron SW-SIMPL
(TBD)

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03
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PART THREE
Product Comparison

Ultra Encode HDMI/SDI vs Ultra Encode AIO

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	Ultra Encode HDMI/SDI	Ultra Encode AIO
Connections	• Input: HDMI or SDI • USB-B config • Antenna x1 • Switch x0 • 12V	• Input: HDMI和SDI • USB-C config • Antenna x2 • Switch x1 • DC 9 ~ 18 V (screw locking power+PoE) • LCD touchscreen
Features	• **Streaming:** up to 6 sessions with limitation on streaming protocol combination • **Encoding:** with resolution up to 2K60, with bitrates up to 16Mbps • **Audio:** 8-channel input and 2-channel encoding • **Web GUI style:** Black	• **Encoding:** with resolution up to 4K30, with bitrates up to 32Mbps for each session • **Streaming:** up to 6 sessions with greater flexibility on streaming protocol combination • **Recording:** SD card, USB storage, network storage • **Audio:** 8-channel input and encoding • **Web GUI style:** White • **Supports** content production (PinP, side-by-side, graphics overlays) • **Supports** scheduler for streaming and recording • **Supports** TVU ISSP protocol • **Supports** NDI|HX3 standard

AJA HELO Plus vs Ultra Encode AIO

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	AJA HELO Plus ($1699)	Ultra Encode AIO (TBD)
Connections	• 1×HDMI & 1×SDI In • 1×HDMI & 1×SDI Loopthru • 1×3.5mm TRS in/out • 1×SD Card Slot • 1×USB A & 1×Mini USB • 1×RJ45	• 1×HDMI & 1×SDI In • 1×HDMI & 1×SDI Loopthru • 1×3.5mm Line in/out • 2×USB A & 1×USB C • 1×SD Card Slot • 1×RJ45 • 2×WIFI
Features	• LED Stereo VU meters • USB A port for media recording and playback. It also supplys 1A of current to the storage device.	• LCD touchscreen (audio volume column) • 1RU rackmounting • NDI | HX3 compatibility • Stream to up to 6 destinations simultaneously

Contact Us

www.magewell.com

sales@magewell.com

marketing@magewell.net

0086-25-52070647

Headquarter: 14th Floor, No. 62 Suyuan Avenue, Jiangning, Nanjing, China

R&D Center: 14th Floor, Building 3, No. 89 Shengli Road, Jiangning, Nanjing, China

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