Omega™
4K/UHD Scaler
for HDBaseT™ and HDMI

Introduction

The Atlona **AT-OME-RX31** is an HDBaseT receiver, three-input switcher, and 4K/UHD scaler with a local HDMI input. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-RX31 features two HDBaseT inputs for receiving video up to 4K/60 4:2:0, plus embedded audio, control, and Ethernet over distances up to 330 feet (100 meters). The HDMI input supports video up to UHD/60 4:4:4. The OME-RX31 is HDCP 2.2 compliant and features 4K/60 upscaling and downscaling with frame rate conversion. Additionally, it provides integrated control for displays and room functions such as motorized screens, and can be externally triggered with the addition of an occupancy sensor. The OME-RX31 is ideal for 4K presentation applications with Omega or UHD-EX Series transmitters, as well as Atlona AV presentation switchers with HDBaseT outputs, local HDMI sources, and the Gain™ Series amplifiers.

Applications

- **Complete system integration**
  The OME-RX31 and an Omega Series switcher / transmitter provide a compact, comprehensive, cost-effective, and fully automated integration solution.
- **Meeting rooms and conference rooms**
  The OME-RX31 can switch between AV from two transmitters below a meeting table, at separate wall locations, or in two podiums. The HDMI input is ideal for a wireless collaboration gateway or digital signage.
- **Active learning classrooms**
  In education applications, the OME-RX31 can be installed in a lectern and used to receive AV from two student pods, each with an OME-ST31A below the table. Built-in 4K scaling optimizes content for the primary 4K or HD display.

Key Features

Dual HDBaseT receiver with local HDMI input

- Three-input switcher with two HDBaseT inputs and an HDMI input.
- HDMI input is ideal for a wireless gateway, PC, video conferencing codec, or media player installed near a display.

Video, audio, power, and data over category cable utilizing HDBaseT technology

- Receives up to 330 feet (100 meters) @ 1080p with CAT5e/6 or 4K/UHD using CAT6a/7 cable.
- Uses easy-to-integrate category cable for low-cost, reliable system installation.

4K/UHD downscaling and upscaling

- Preserves color and spatial detail when down-converting 4K content to 1080p or vice versa.
- Ideal for presentation applications where content is to be viewed on a variety of 4K and HD displays. Also ideal for downscaling to 1080p for hardware VC codecs.

Automatic input selection and automatic display control

- Automatically changes display power state, and switches between inputs based on device connection or disconnection from the switcher.
- Enables effortless, automated system operation without the need for an external control system.

Audio de-embedding

- De-embeds two channel PCM audio and delivers to a balanced, analog audio output.
- Independent volume and mute controls for embedded and de-embedded two-channel PCM audio, plus five-band EQ for the analog audio output.

Dual Ethernet ports and integrated network switch

- Allows a single connection to an AV LAN for IP control of a display and the OME-RX31 (plus transmitter or switcher over HDBaseT).
- Simplify system design and integration with just one network drop for AV system control.

Contact closure for screen or display lift control

- Dry contact closure triggers electronic screen or lift operation based on active or standby mode of the switcher / scaler.
- Automates screen or lift activation at system power-up; eliminates need for a separate AV control system.

Trigger I/O ports for occupancy sensing or remote button controls

- When used with an occupancy sensor, the switcher can be set to automatically go into standby, and power off the display once participants have left the room.
- Greatly simplifies user operation by avoiding the need to manually power up the system.

Specifications

Video		
HDMI	2.0	
HDCP	2.2	
UHD/HD	4096×2160 @ 60[1]/50/30/25/24 Hz 3840×2160 @ 60[1]/50/30/25/24 Hz 1920x1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz 1920x1080i @ 30/29.97/25 Hz	1280x720p @ 60/59.94/50 Hz 720x576p @ 50 Hz 720x576i @ 50 Hz 640x480p @ 60/59.96 Hz 640x480i @ 30 Hz
VESA All resolutions are 60 Hz	2560×1600 2048×1536 1920×1200 1680×1050 1600×1200 1440×900 1400×1050 1280×1024	1280×800 1366×768 1360×768 1152×864 1024×768 800×600 640×480
Scaler	1024x768 @ 60 Hz 1280x720 @ 50/60 Hz 1280x768 @ 60 Hz 1280x800 @ 60 Hz 1360x768 @ 60 Hz 1600x1200 @ 60 Hz	1920x1080 @ 24/25/50/60 Hz 1920x1200 @ 60 Hz 2048x1080 @ 60 Hz 3840x2160 (UHD) @ 24/25/30/50/60 Hz 4096x2160 (DCI) @ 24/25/30/50/60 Hz
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	
Color Depth	8-bit, 10-bit, 12-bit	
HDR[2]	HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ 60Hz	

Audio			
HDMI Pass-Through Formats	LPCM 2.0 LPCM 5.1 LPCM 7.1	Dolby® Digital Dolby Digital Plus™ Dolby TrueHD Dolby Atmos®	DTS® Digital Surround™ DTS-HD Master Audio™ DTS:X®
Bit Rate	24 Mbps, max		
Analog Audio			
Format	2-channel stereo		
Balanced Output	+4 dBu, nominal gain; +20 dBu headroom		
Frequency Response	20 Hz to 20 kHz, ±0.5 dB		
THD + N	< 0.004% @ 20 Hz to 20 kHz		
SNR	> 104 dB @ 1 kHz, zero clipping @ 0 dBFS, unweighted		
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz		

Control	
RS-232	Device control and configuration Supported baud rates: 2400, 4800, 9600, 19200, 38400, 57600, 115200
Trigger	Occupancy sensor triggering; wake from standby and/or display power-up when room becomes occupied. Electrical rating: 30 V @ 1 A (max.)
Relay	Contact closure control for room functions such as motorized screens and display lifts, as well as occupancy sensing and remote button controls. Normally Open (NO), adjustable Toggle and Pulse modes. Electrical rating: 48 V @ 1 A.

Control	
IP	Protocols: HTTPS, Telnet, mDNS Modes: DHCP, Static – selectable through front panel and built-in web server
CEC	Yes

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI IN/OUT	16	5	30	10
CAT5e	295	90	330	100
CAT6/6a/7	330	100	330	100

Connectors, Controls, and Indicators	
HDMI IN	1 – Type A, 19-pin female
HDMI OUT	1 – Type A, 19-pin female
AUDIO OUT	1 – 5-pin captive screw, balanced / unbalanced 2-channel
TRIGGER I/O	1 – 4-pin captive screw
RS-232	1 – 5-pin captive screw
RELAY	1 – 3-pin captive screw
LAN	2 – RJ45, 100Base-T
HDBaseT	2 – RJ45
PWR	1 - 4-pin, DIN
Control Buttons: SHOW IP, INPUT IP MODE, RESET	 2 – momentary, tact-type 2 – momentary, tact-type
Function Indicators: PWR, INPUT IP MODE, RESET	 3 – LED, green 2 – LED, green

Temperature	Fahrenheit	Celsius
Operating	32 to 122	0 to 50
Storage Temperature	-4 to 140	-20 to 60
Operating Humidity (RH)	20% to 90%, non-condensing	

Power	
Consumption	8.1 W
External Power Supply	100 - 240 V AC, 50/60 Hz Output: 24 V / 2.7 A DC

Dimensions	Inches	Millimeters
Device (H x W x D)	1.02 x 8.62 x 5.98	26 x 219 x 152

Weight	Pounds	Kilograms
Device	2.15	0.975

Certification	
Device	CE, FCC
Power Supply	CE, FCC, UL

(1) 4K/UHD p60 4:4:4 supported on input/output HDMI, 4K/UHD p60 4:2:0 is supported on HDBaseT.
(2) HDR supported on HDMI only.

Accessories

SKU	Description
AT-LC-H2H-1M	LinkConnect HDMI to HDMI cable (1 meter)
AT-LC-H2H-2M	LinkConnect HDMI to HDMI cable (2 meter)
AT-LC-H2H-3M	LinkConnect HDMI to HDMI cable (3 meter)

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