Omega

4K/UHD Scaler

for HDBaseT and HDMI

Introduction

The Atlona AT-OME-RX21 is an HDBaseT receiver 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-RX21 receives HDBaseT for 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-RX21 is HDCP 2.2 compliant and features 4K/60 upscaling and downscaling with frame rate conversion. The OME-RX21 is ideal for 4K presentation applications with Omega, HDVS-200, or UHD-EX Series transmitters, as well as Atlona AV presentation switchers with HDBaseT outputs, local HDMI sources, and the Gain™ Series amplifiers. Also available is the AT-OME-RX21-KIT which includes the AT-HDVS-200-TX HDMI and VGA switching transmitter.

The OME-RX21 combines the benefits of 4K/UHD scaling, auto-switching for HDBaseT and HDMI inputs, integrated display control, and more. It incorporates many popular integration convenience features, while delivering excellent performance and value for 4K presentation and video conferencing applications. The OME-RX21 can remotely power an Atlona HDBaseT transmitter through Power over Ethernet (PoE). For additional integration convenience, the OME-RX21 features audio de-embedding, integrated two-port Ethernet switch, contact closure ports for controlling a motorized screen or display lift, internal video test patterns for setup and troubleshooting, and remote management with AMS (Atlona Management System).

Applications

- **Complete system integration**
  The OME-RX21 and an HDVS-200 or Omega Series switcher / transmitter provide a compact, yet comprehensive and cost-effective system solution for small meeting spaces.
- **Larger system applications**
  The OME-RX21 is ideal for extending AV and control, from a switcher in an equipment rack to a remote display. Built-in 4K scaling optimizes content for 4K and HD displays.

Key Features

HDBaseT receiver with local HDMI input

- Two-input switcher with HDBaseT and HDMI inputs.
- 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, including a confidence monitor.

Local AC powering – PoE (Power over Ethernet) source

- Supplies industry standard PoE over HDBaseT to an Omega™ or HDVS-200 Series transmitter.
- Allows convenient transmitter installation at any remote location, without the need for local AC power.

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 from any video source 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-RX21 (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.

Specifications

Video		
Signal Type	Input - HDMI	
	Output - HDBaseT	
Copy Protection	HDCP 2.2	
Pixel Clock	300MHz	
UHD/HD/SD	4096x2160@60(1)/50(1)/30/25/24Hz 3840×2160@60(1)/50(1)/30/25/24Hz 1080p@60/59.9/50/30/29.97/25/24/23.98Hz 1080i@30/29.97/25Hz	720p@60/59.94/50Hz 576p@50Hz 576i@25Hz 480p@60/59.96Hz 480i@30Hz
VESA All resolutions are 60Hz	2560×1600 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 Up/Down	4096x2160p60 4096x2160p50 4096x2160p30 4096x2160p25 4096x2160p24 3840x2160p60 3840x2160p50 3840x2160p30 3840x2160p25 3840x2160p24 2048x1080p60 1920x1200p60	1920x1080p60 1920x1080p50 1920x1080p25 1920x1080p24 1600x1200p60 1360x768p60 1280x800p60 1280x768p60 1280x720p60 1280x720p50 1024x768p60
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	

Audio			
HDMI Pass-Through Formats	PCM 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 Mbits/s max		
Analog Audio			
Format	Stereo 2-Channel		
Balanced Output	+4 dBu nominal gain, +20 dB headroom		
Frequency Response	20 Hz to 20 kHz, ± 0.5 dB		
Impedance	150 Ω		
Stereo channel separation	> 90 dB		
THD+N	< 0.03% at 20 Hz to 20 kHz		
SNR	> 90 dB at 1 kHz, zero clipping @ 0 dBFS, unweighted		
EQ	5 band, 63Hz, 85Hz, 250Hz, 1kHz, 4kHz		
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz		

Ethernet	
Port	2 x RJ45
Standards and Protocols	HTTPS, Telnet, mDNS, SSL, IEEE 802.1x
Speeds	10/100/1000 Mbps
Addressing	DHCP, Static – selectable through rear panel, IP & RS-232 commands, and built-in web server

RS-232	
Port	2 x 3-pin captive screw
Default Parameters	Port 1 (display control) - 9600, 8-bit, None, 1 Port 2 (unit control) - 115200, 8-bit, None, 1
Use	1-way connected display control 2-way device control and monitoring
Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
Data flow	Bi-directional

Relay	
Port	1 x 3-pin captive screw
State	Normally open (NO)
Mode	Adjustable between Toggle and Pulse
Electrical rating	48V@1A

CEC	
Port	1 x HDMI, Type A, 19-pin female
Triggering	Through IP, RS-232, and built-in web server

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI IN/OUT	15	5	30	10
CAT5e	295	90	330	100
CAT6/6a/7	330	100	330	100

Buttons and Indicators	
Control Buttons: DEVICE IP, INPUT, PATTERN IP MODE, RESET	 3 - momentary, tact-type 2 - momentary, recessed
Function Indicators: IP MODE, RESET, PWR LINK	 3 - LED, green 1 - LED, Yellow

Connectors	
HDMI IN	1 - Type A, 19-pin female
HDBaseT IN	1 - RJ45, female
HDMI OUT	1 - Type A, 19-pin female
AUDIO OUT	1 - 5-pin captive screw, balanced / unbalanced 2-channel
RELAY	1 - 3-pin captive screw
RS-232	2 - 3-pin captive screw (bidirectional)
LAN	2 - RJ45, 100Base-T
DC 24V	1 - 4-pin, mini-DIN locking connector

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

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

Dimensions (H x W x D)	Inches	Millimeters
Unit	1.02 x 8.62 x 5.98	26 x 219 x 152
Power Supply		

Weight	Pounds	Kilograms
Device	1.96	0.89

Certification	
Device	CE, FCC, UL

Accessories

SKU	Description
AT-LC-H2H-1M	LinkConnect HDMI to HDMI Cable
AT-LC-H2H-2M	LinkConnect HDMI to HDMI Cable
AT-LC-H2H-3M	LinkConnect HDMI to HDMI Cable

Footnotes

1 4K/UHD @ 60Hz is limited to 4:2:0 over HDBaseT, 4K/UHD@60Hz 4:4:4 is available via local HDMI

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