# AT-OME-RX21
# Specification Sheet

**Omega™ 2x1 AV Switcher and HDBaseT Receiver**

## Description

The 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 AT-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 AT-OME-RX21 is HDCP 2.2 compliant and features 4K/60 upscaling and downscaling with frame rate conversion. It is ideal for 4K presentation applications with Omega, HDVS-200, or UHD-EX Series transmitters, as well as AV presentation switchers with HDBaseT outputs, local HDMI sources, and Gain™ Series amplifiers.

The AT-OME-RX21 combines 4K/UHD scaling, auto-switching for HDBaseT and HDMI inputs, integrated display control, and more, delivering excellent performance and value for 4K presentation and video conferencing applications. It can remotely power an HDBaseT transmitter through Power over Ethernet (PoE). For additional integration convenience, it features audio de-embedding, an integrated two-port Ethernet switch, a contact closure port for controlling a motorized screen or display lift, internal video test patterns for setup and troubleshooting, and remote management with VDM (Velocity Device Manager).

## Applications

### Complete System Integration

- The AT-OME-RX21 and an HDVS-200 or Omega Series switcher or transmitter provide a compact, yet comprehensive and cost-effective system for small meeting spaces.

### Larger System Applications

- Extends 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.
- The 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 using HDBaseT technology

- Receives up to 330 feet (100 meters) at 1080p with Cat 5e/6 or at 4K/UHD with Cat 6a/7 cable.
- Uses easy-to-integrate category cable for low-cost, reliable system installation.

### Local AC powering — PoE source

- Supplies PoE over HDBaseT to an Omega or HDVS-200 Series transmitter.
- Allows convenient transmitter installation at any remote location without local AC power.

### 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 viewed on a variety of 4K and HD displays.

### Automatic input selection and automatic display control

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

### Audio de-embedding

- De-embeds two-channel PCM audio 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 receiver (plus transmitter or switcher over HDBaseT).
- Simplifies 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 the active or standby mode of the unit.
- Automates screen or lift activation at system power-up, without a separate AV control system.

## Specifications

| Video | |
|---|---|
| Signal | Input: HDBaseT, HDMI<br>Output: HDMI |
| Copy Protection | HDCP 2.2 |
| Pixel Clock | 300 MHz |
| UHD / HD / SD | 4096 × 2160 @ 24, 25, 30, 50, 60 Hz<br>3840 × 2160 @ 24, 25, 30, 50, 60 Hz<br>1920 × 1080p @ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz<br>1920 × 1080i @ 25, 29.97, 30 Hz<br>1280 × 720p @ 50, 59.94, 60 Hz<br>720 × 576p @ 50 Hz; 720 × 576i @ 25 Hz<br>640 × 480p @ 59.94, 60 Hz; 640 × 480i @ 30 Hz<br>4K/UHD @ 50/60 Hz: 4:2:0 over HDBaseT; 4:4:4 on the local HDMI input |
| VESA | 2560 × 1600, 1920 × 1200, 1680 × 1050, 1600 × 1200, 1440 × 900, 1400 × 1050, 1366 × 768, 1360 × 768, 1280 × 1024, 1280 × 800, 1152 × 864, 1024 × 768, 800 × 600, 640 × 480 — all @ 60 Hz |
| VESA 21:9 | 2560 × 1080 @ 30 Hz 4:4:4<br>2560 × 1080 @ 60 Hz 4:4:4<br>3440 × 1440 @ 30 Hz 4:4:4<br>3440 × 1440 @ 50 Hz 4:4:4<br>3840 × 1600 @ 30 Hz 4:4:4 |
| Scaler Output (Up / Down) | 4096 × 2160p @ 24, 25, 30, 50, 60 Hz<br>3840 × 2160p @ 24, 25, 30, 50, 60 Hz<br>2048 × 1080p @ 60 Hz<br>1920 × 1200p @ 60 Hz<br>1920 × 1080p @ 24, 25, 50, 60 Hz<br>1600 × 1200p @ 60 Hz<br>1360 × 768p @ 60 Hz<br>1280 × 800p @ 60 Hz<br>1280 × 768p @ 60 Hz<br>1280 × 720p @ 50, 60 Hz<br>1024 × 768p @ 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 |

| 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 Mbps maximum |
| Sample Rate | 32, 44.1, 48, 88.2, 96, 176.4, 192 kHz |

| Analog Audio Output | |
|---|---|
| Format | 2-channel stereo |
| Balanced Output | +4 dBu nominal, +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 at 0 dBFS, unweighted |
| EQ | 5-band: 63 Hz, 85 Hz, 250 Hz, 1 kHz, 4 kHz |

| Ethernet | |
|---|---|
| Port | 2× RJ45 |
| Standards and Protocols | HTTPS, Telnet, mDNS, SSL, IEEE 802.1x |
| Speeds | 10/100 Mbps (100Base-T) |
| Addressing | DHCP or static — selectable from the panel, IP and RS-232 commands, and the built-in web server |

| RS-232 | |
|---|---|
| Port | 2× 3-pin captive screw |
| Default Parameters | Port 1 (display control): 9600 baud, 8 data bits, no parity, 1 stop bit<br>Port 2 (unit control): 115200 baud, 8 data bits, no parity, 1 stop bit |
| Use | Port 1: one-way connected display control<br>Port 2: two-way device control and monitoring |
| Baud Rates | 2400, 4800, 9600, 19200, 38400, 57600, 115200 |
| Data Flow | Bi-directional |

| Relay | |
|---|---|
| Port | 1× 3-pin captive screw |
| State | Normally open (NO) |
| Mode | Toggle or Pulse (adjustable) |
| Electrical Rating | 48 V @ 1 A |

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

| Cable / Resolution | 4K/UHD | 1080p |
|---|---|---|
| HDMI IN / OUT | 15 ft (5 m) | 30 ft (10 m) |
| Cat 5e | 295 ft (90 m) | 330 ft (100 m) |
| Cat 6 / 6a / 7 | 330 ft (100 m) | 330 ft (100 m) |

| Buttons and Indicators | |
|---|---|
| DEVICE IP, INPUT, PATTERN | 3× momentary, tact-type buttons |
| IP MODE, RESET | 2× momentary, recessed buttons |
| IP MODE, RESET, PWR | 3× LED, green |
| LINK | 1× LED, yellow |

| Connectors | |
|---|---|
| HDMI IN | 1× HDMI Type A, 19-pin female |
| HDBaseT IN | 1× RJ45 |
| HDMI OUT | 1× HDMI 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 (bi-directional) |
| LAN | 2× RJ45 |
| DC 24V | 1× 4-pin mini-DIN, locking |

| Environmental | Fahrenheit | Celsius |
|---|---|---|
| Operating Temperature | +32 to +122 °F | 0 to +50 °C |
| Storage Temperature | -4 to +140 °F | -20 to +60 °C |
| Operating Humidity (RH) | 20% to 60%, non-condensing | |

| Power | |
|---|---|
| Consumption | 19.98 W |
| BTU/h | 68.1 |
| Supply | Input: 100–240 V AC, 50/60 Hz<br>Output: 24 V DC, 2.7 A |

| Dimensions (H × W × D) | Inches | Millimeters |
|---|---|---|
| Unit | 1.02 × 8.62 × 5.98 in | 26 × 219 × 152 mm |
| Power Supply (AT-PS-2427-D4) | 1.26 × 1.93 × 4.69 in | 32 × 49 × 119 mm |

| Weight | Pounds | Kilograms |
|---|---|---|
| Device | 1.96 lb | 0.89 kg |

| Certifications | |
|---|---|
| Device | FCC, CE, UL |

| Compliance | |
|---|---|
| NDAA-889 | Yes |
| TAA | Yes |

| Warranty | |
|---|---|
| Device | To view the product warranty, visit: hallresearch.com/warranty |

© 2026 Hall Research, Inc. All rights reserved. Pricing, specifications and availability subject to change without notice. Actual products, product images, and online product images may vary from images shown here.
HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. Dolby, Dolby Atmos, and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation. DTS, the Symbol, DTS and the Symbol together, and Digital Surround are registered trademarks and/or trademarks of DTS, Inc. HDBaseT is a trademark of the HDBaseT Alliance. Gain is a trademark of Hall Research, Inc. All other trademarks are the property of their respective owners.