



## Introduction

The Atlona **AT-OME-ST31A** is a 3×1 switcher and HDBaseT transmitter, with HDMI and USB-C inputs. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-ST31A features mirrored HDMI and HDBaseT outputs and is HDCP 2.2 compliant. The USB-C input is ideal for AV interfacing with newer Mac®, Chromebook™, and Windows® PCs, as well as smartphones and tablets. Video signals up to 4K/60 4:2:0, plus embedded audio, control, and Ethernet can be transmitted over HDBaseT up to 330 feet (100 meters). All inputs and the local HDMI output support 4K HDR and 4K/60 4:4:4 at HDMI data rates up to 18 Gbps. Additionally, 4K downscaling to 1080 @ 60, 30, or 24 Hz is available for the HDMI output when connected to an HD sink. Audio de-embedding to a balanced analog audio output enables local sound reinforcement applications. The OME-ST31A is designed for remote PoE powering, and is compatible with Omega series receivers and switchers, select HDVS series receivers such as the AT-HDVS-SC-RX scaler, the AT-UHD-EX-100CE-RX receiver, and other Atlona switchers with HDBaseT inputs.

## Applications

- Complete system integration**  
 The OME-ST31A and a compatible HDBaseT receiver provide a compact, yet comprehensive and cost-effective integration solution.
- Larger system applications**  
 The OME-ST31A is ideal for extending AV connectivity from a lectern or a conference table to a remote display, where presenters can easily access the system.
- Auditoriums and lecture halls**  
 This switcher can be used for presenting 4K video content through the projector, while also optimizing for a 1080p confidence monitor.

## Key Features

### 3x1 HDBaseT switcher with HDMI and USB-C inputs

- USB-C and two HDMI inputs.
- Immediate compatibility with laptops and tablets with USB-C ports supporting AV.<sup>(1)</sup>
- No need to provide USB-C to HDMI adapters.

### Mirrored HDBaseT and HDMI outputs

- Local and long-distance video outputs provide flexible options for AV system designs and applications.

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

- Transmits up to 330 feet (100 meters) @ 1080p with CAT5e/6 or 4K/UHD using CAT6a/7 cable.<sup>(2)</sup>
- Supports 4K/UHD @ 60 Hz with 4:2:0 chroma subsampling.

### 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling on local ports (HDMI and USB-C), plus support for HDR formats

- Local HDMI and USB-C ports are compatible with 4K HDR10 @ 60 Hz and Dolby Vision™ @ 60 Hz, as well as HLG (Hybrid Log-Gamma) for 60p HDR broadcast services.

### Mirrored HDMI output with integrated 4K to 1080p downscaling

- Integrated video processing available on the HDMI output for automatic 4K/UHD @ 60 Hz to 1080 (based on connected display EDID).
- Ideal for applications with a mix of 1080p and UHD sink devices, and when a 1080p confidence monitor is used in conjunction with 4K/UHD presentations.

### Remote PoE (Power over Ethernet) or local powering

- Industry standard IEEE 802.3af PoE is supplied by Atlona receiver or switcher over HDBaseT.
- Allows convenient switcher installation at a table or other remote location, without the need for local AC power.
- Also can be locally powered by the optional AT-PS-245-D4 power supply – to supply PoE to a receiver and charge a USB-C mobile device.

### Automatic display control

- Automatically changes display power state based on active or standby mode of the switcher. Control signals to display are transmitted via IP, RS-232, or CEC.
- Enables display and volume control. CEC enables control of consumer displays (as supported by the display manufacturer).
- Also can be configured to power off display after a period of inactivity.
- Eliminates the need for a complex AV control system.

### Automatic input selection using hot plug detect and video detection technology

- Selects active input when sources are connected or if there is a change in source power status.
- Enables simplified, automatic system operation without user intervention.

## Key Features (continued)

### Audio de-embedding

- De-embeds two-channel PCM audio from any video source to a balanced, analog output.

### Multi-channel audio compliant

- Passes through multi-channel audio formats from the HDMI or USB-C inputs.
- Supports PCM, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®.

### EDID management

- Manages EDID communications with the source through a display's EDID or internally stored EDID.
- Ensures desired audio formats and video resolutions are provided to the AV system.

### HDCP 2.2 management

- Automatically reports HDCP compliance status to the source based on the sink device.
- Allows non-protected material from PCs to pass to non-compliant displays, streaming devices, and teleconference systems; protected content is not transmitted.
- Displays a green splash screen as visual confirmation that protected content is being blocked from transmission to a non-compliant display.

### Integrated HDBaseT link testing and status monitoring

- Local and long-distance video outputs provide flexible options for AV system designs and applications.
- Quick, easy verification or troubleshooting of RJ-45 termination or twisted pair cable quality.

### Easy, GUI-based configuration using integrated web server

- Offers menu-based configuration of device settings including network access, input switching, display control, HDCP and EDID management, and more.
- Allows fast configuration of internal product settings and troubleshooting from a mobile device or PC in the field.

### TCP/IP and RS-232 control

- Flexible control options for compatibility with Atlona Velocity™ and third-party control systems.
- Reduces integration time and costs.

### Easy to configure and manage with AMS (Atlona Management System)

- Centralized, network-based configuration and management of Atlona IP-controllable products and systems.
- Manage configuration and firmware updates for AV devices spanning a facility, building, enterprise, or residence.
- Available as a cost-effective server appliance, or a free software download.

### Field-updatable firmware

- Device can be updated in the field via AMS or the web GUI.
- USB port also available for firmware updates.

## Key Features (continued)

### Front panel power and signal status LED indicators

- LED indicators provide power, HDBaseT link, and input selection status information.
- Provides local, convenient setup and troubleshooting when network access is not available.

### Low-profile, 1.02 inch (26 mm) high enclosure

- Easy installation into confined spaces below tables and in furniture.

### Included accessories

- Installation guide, surface mounting hardware, and 2 meter (6.5 foot) USB-C male-to-male cable.

## Specifications

| Video                               |                                                                                                                                                                                                                                                                                                                             |                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Signal                              | Input - HDMI, USB-C<br>Output - HDMI, HDBaseT                                                                                                                                                                                                                                                                               |                                           |
| Copy Protection                     | HDCP 1.4 / 2.2                                                                                                                                                                                                                                                                                                              |                                           |
| Pixel Clock                         | 600 MHz (300 MHz over HDBaseT)                                                                                                                                                                                                                                                                                              |                                           |
| UHD/HD/SD                           | 4096x2160 (DCI) @ 60 <sup>(4)</sup> /30/25/24 Hz      720x576p @ 50 Hz<br>3840x2160 (UHD) @ 60 <sup>(4)</sup> /30/25/24 Hz      720x576i @ 50 Hz<br>1080p @      640x480p @ 60/59.96 Hz<br>60/59.9/50/30/29.97/25/24/23.98 Hz      640x480i @ 60 Hz<br>1080i @ 60/59.94/50 Hz<br>720p @ 60/59.94/50 Hz                      |                                           |
| VESA<br>All resolutions are 60Hz    | 2560x1600 @ 60 Hz      1280x800 @ 60 Hz<br>2048x1536 @ 60 Hz      1366x768 @ 60 Hz<br>1920x1200 @ 60 Hz      1360x768 @ 60 Hz<br>1680x1050 @ 60 Hz      1152x864 @ 60 Hz<br>1600x1200 @ 60 Hz      1024x768 @ 60 Hz<br>1440x900 @ 60 Hz      800x600 @ 60 Hz<br>1400x1050 @ 60 Hz      640x480 @ 60 Hz<br>1280x1024 @ 60 Hz |                                           |
| Scaler (HDMI Output) <sup>(2)</sup> | IN                                                                                                                                                                                                                                                                                                                          | OUT                                       |
|                                     | 4K@24 Hz<br>4K@30 Hz<br>4K@60 Hz                                                                                                                                                                                                                                                                                            | 1080p@24 Hz<br>1080p@30 Hz<br>1080p@60 Hz |
| Scaler Pass-Through (HDMI Output)   | 4K @ 60 Hz                                                                                                                                                                                                                                                                                                                  | 4K @ 60 Hz                                |
| USB-C                               | Up to 4K/UHD @ 60Hz                                                                                                                                                                                                                                                                                                         |                                           |
| Color Space                         | YUV, RGB                                                                                                                                                                                                                                                                                                                    |                                           |
| Chroma Subsampling                  | 4:4:4, 4:2:2, 4:2:0                                                                                                                                                                                                                                                                                                         |                                           |
| Color Depth                         | 8-bit, 10-bit, 12-bit                                                                                                                                                                                                                                                                                                       |                                           |
| HDR                                 | HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ 60Hz; HDMI and USB-C ports only                                                                                                                                                                                                                                         |                                           |

| Audio                        |                                                                |                     |                        |
|------------------------------|----------------------------------------------------------------|---------------------|------------------------|
| HDMI<br>Pass-Through Formats | PCM 2.0                                                        | Dolby® Digital      | DTS® Digital Surround™ |
|                              | LPCM 5.1                                                       | Dolby Digital Plus™ | DTS-HD Master Audio™   |
|                              | LPCM 7.1                                                       | Dolby TrueHD        |                        |
| Sample Rate                  | 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz |                     |                        |
| Bit Rate                     | 24 Mbits/s 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                          | > 105 dB @ 1 kHz, zero clipping @ 0 dBFS, unweighted           |                     |                        |

| Protocols      |                                       |
|----------------|---------------------------------------|
| Supported      | HTTP, Telnet                          |
| Addressing     | DHCP, static                          |
| Authentication | IEEE 802.1x: PEAP/MSCHAPv2 or EAP-TLS |

| Control |                                                                           |
|---------|---------------------------------------------------------------------------|
| RS-232  | Device control and configuration; supports baud rates from 2400 to 115200 |
| IP      | Device control and configuration                                          |
| CEC     | Device control and configuration                                          |

| Connectors  |                                                         |
|-------------|---------------------------------------------------------|
| HDMI IN     | 2 - Type A, 19-pin female                               |
| HDMI OUT    | 1 - Type A, 19-pin female                               |
| USB-C       | 1 - USB Type-C, 24-pin female                           |
| HDBaseT OUT | 1 - RJ45                                                |
| LAN         | 1 - RJ45, 10/100/1000 Mbps                              |
| RS-232      | 1 - 3-pin captive screw (bidirectional)                 |
| AUDIO OUT   | 1 - 5-pin captive screw, balanced/unbalanced, 2-channel |
| DC 24V      | 1 - 4-pin, locking                                      |

| USB                              |                                                            |
|----------------------------------|------------------------------------------------------------|
| USB-C Device Charging Capability | 60 W @ 20 V / 3 A, 36 W @ 12 V / 3 A, and 15 W @ 5 V / 3 A |

| Controls and Indicators   |                                    |
|---------------------------|------------------------------------|
| INPUT, DISPLAY            | 2 - momentary, tact-type           |
| IP MODE, RESET            | 2 - momentary, tact-type, recessed |
| PWR indicator             | 1 - LED, green                     |
| LINK indicator            | 1 - LED, yellow                    |
| INPUT indicators: 1, 2, 3 | 3 - LED, green                     |

| 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 |

| Power                            |                                                              |
|----------------------------------|--------------------------------------------------------------|
| Consumption                      | 101.5 W (with USB charging)<br>24.2 W (without USB charging) |
| BTU/h                            | 82.5                                                         |
| External Power Supply (optional) | Input: 110 - 220 V AC, 50/60 Hz<br>Output: 24 V DC, 3 A      |

| Environmental           |                                |
|-------------------------|--------------------------------|
| Operating Temperature   | +32 to +113 °F<br>0 to +45 °C  |
| Storage Temperature     | -4 to +140 °F<br>-20 to +60 °C |
| Operating Humidity (RH) | 20% to 95%, non-condensing     |

| Dimensions (H x W x D)      | Inches                                                                                                                         | Millimeters       |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Device                      | 1.02 x 8.62 x 5.98                                                                                                             | 26 x 219 x 152    |
| Power Supply (AT-PS-245-D4) | 1.6 x 2.6 x 6.2                                                                                                                | 40.6 x 66 x 157.4 |
| Weight                      | Pounds                                                                                                                         | Kilograms         |
| Device                      | 1.95                                                                                                                           | 0.88              |
| Certification               |                                                                                                                                |                   |
| Device                      | CE, FCC, RoHS                                                                                                                  |                   |
| Power Supply                | FCC, RCM, cULus, CE, RoHS                                                                                                      |                   |
| Compliance                  |                                                                                                                                |                   |
| NDAA-899                    | Yes                                                                                                                            |                   |
| Warranty                    |                                                                                                                                |                   |
| Device                      | To view the product warranty, use the following link:<br><a href="https://atlona.com/warranty">https://atlona.com/warranty</a> |                   |

## Accessories

| Description                                | SKU                      |
|--------------------------------------------|--------------------------|
| 24 V / 3 A Power Supply                    | AT-PS-245-D4             |
| LinkConnect HDMI to HDMI Cable             | AT-LC-H2H-1M / 2M / 3M   |
| LinkConnect Mini DisplayPort to HDMI Cable | AT-LC-MDP2H-1M / 2M / 3M |
| LinkConnect USB-C to USB-C Cable           | AT-LC-UC2UC-2M           |
| Architectural Cable Access Enclosure       | AT-PKT-3H                |

## Footnotes

- (1) USB-C port supports AV and device charging (with optional AT-PS-245-D4 power supply), but not USB host data.
- (2) To achieve optimal HDBaseT performance, CAT6a or CAT7 shielded twisted pair cable is highly recommended.
- (3) HDBaseT receiver or switcher must also be HDCP 2.2 compliant.
- (4) 4K/UHD p60 4:4:4 supported on input/output HDMI and USB-C input ports, 4K/UHD p60 4:2:0 is supported on HDBaseT output.
- (5) Scaler does not support frame rate conversion.

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