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

3×1 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.[1]

- 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.[2]

- 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.

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.

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 (USB 3.1 Gen 1).

Award-winning 10 year limited product warranty

- Ensures long-term product reliability and performance in commercial and residential systems.

- Specify, purchase, and install with confidence.

Specifications

Video	
HDMI Specification	HDMI 2.0[4], HDCP 1.4, 2.2
UHD/HD/SD	4096x2160 (DCI) @ 60[4]/30/25/24 Hz 720x576p @ 50 Hz 3840×2160 (UHD) @ 60[4]/30/25/24 Hz 720x576i @ 50 Hz 1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz 640x480p @ 60/59.96 Hz 1080i @ 60/59.94/50 Hz 640x480i @ 60 Hz 720p @ 60/59.94/50 Hz
VESA	2560×1600 @ 60 Hz 1280×800 @ 60 Hz 2048×1536 @ 60 Hz 1366×768 @ 60 Hz 1920×1200 @ 60 Hz 1360×768 @ 60 Hz 1680×1050 @ 60 Hz 1152×864 @ 60 Hz 1600×1200 @ 60 Hz 1024×768 @ 60 Hz 1440×900 @ 60 Hz 800×600 @ 60 Hz 1400×1050 @ 60 Hz 640×480 @ 60 Hz 1280×1024 @ 60 Hz

Scaler (HDMI Output)[5]	IN	OUT
	4K @ 24 Hz 4K @ 30 Hz 4K @ 60 Hz, 4:2:0	1080p @ 24 Hz 1080p @ 30 Hz 1080p @ 60 Hz (YUV/RGB, 4:4:4)
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			
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®
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 v3.1, 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

Signal			
Maximum TMDS Clock	600 MHz (300 MHz over HDBaseT)		
HDBaseT	10 Gbps		

Power		
Consumption	101.5 W (with USB charging) 24.2 W (without USB charging)	
External Power Supply (optional)	Input: 110 - 220 V AC, 50/60 Hz Output: 24 V DC, 3 A Safety: FCC, RCM, cULus, CE, RoHS	

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

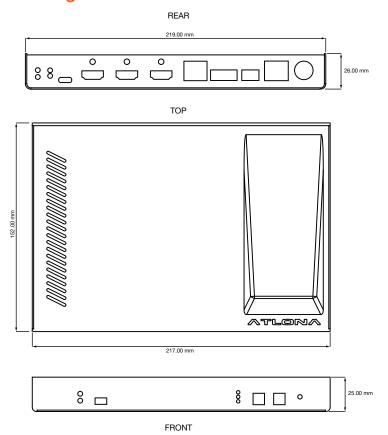| Dimensions (H x W x D)	Inches	Millimeters
Device	1.02 x 8.62 x 5.98	26 x 219 x 152
Power Supply (AT-PS-245-D4)	1.6 x 2.6 x 6.2	40.6 x 66 x 157.4

Weight	Pounds	Kilograms
Device	1.95	0.88

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

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

Drawings

REAR

219.00 mm

26.00 mm

TOP

152.00 mm

217.00 mm

ATLONA

25.00 mm

FRONT

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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