



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.⁽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.

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 Output - HDMI, HDBaseT	
Copy Protection	HDCP 1.4 / 2.2	
Pixel Clock	600 MHz (300 MHz over HDBaseT)	
UHD/HD/SD	4096x2160 (DCI) @ 60 ⁽⁴⁾ /30/25/24 Hz 3840x2160 (UHD) @ 60 ⁽⁴⁾ /30/25/24 Hz 1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz 1080i @ 60/59.94/50 Hz 720p @ 60/59.94/50 Hz	720x576p @ 50 Hz 720x576i @ 50 Hz 640x480p @ 60/59.96 Hz 640x480i @ 60 Hz
VESA All resolutions are 60Hz	2560x1600 @ 60 Hz 2048x1536 @ 60 Hz 1920x1200 @ 60 Hz 1680x1050 @ 60 Hz 1600x1200 @ 60 Hz 1440x900 @ 60 Hz 1400x1050 @ 60 Hz 1280x1024 @ 60 Hz	1280x800 @ 60 Hz 1366x768 @ 60 Hz 1360x768 @ 60 Hz 1152x864 @ 60 Hz 1024x768 @ 60 Hz 800x600 @ 60 Hz 640x480 @ 60 Hz
Scaler (HDMI Output) ⁽²⁾	IN	OUT
Scaler Pass-Through (HDMI Output)	4K@24 Hz 4K@30 Hz 4K@60 Hz	1080p@24 Hz 1080p@30 Hz 1080p@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 Pass-Through Formats	PCM 2.0 LPCM 5.1 LPCM 7.1	Dolby® Digital Dolby Digital Plus™ Dolby TrueHD	DTS® Digital Surround™ DTS-HD Master Audio™
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) 24.2 W (without USB charging)
BTU/h	82.5
External Power Supply (optional)	Input: 110 - 220 V AC, 50/60 Hz Output: 24 V DC, 3 A

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		FCC, RCM, cULus, CE, RoHS	
Compliance			
NDA-899		Yes	
Warranty			
Device		To view the product warranty, use the following link: https://atlon.com/warranty	

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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