



## Introduction

The Atlona **AT-OME-CS31-SA-HDBT** is an AV presentation and collaboration system for classrooms and conference rooms. It features AV switching of remote and local sources, a mixer amplifier, and USB hub.

The switcher has one HDBaseT® input supporting extension of HDMI, Ethernet, power, control, and USB 2.0 data up to 330 feet (100 meters) as well as two HDMI® inputs. Sources connected to these inputs, such as laptops, computers, and document cameras, are routed to the HDMI output connected to a projector or display. The amplifier of the OME-CS31-SA-HDBT delivers either two channels of 25 watts or a single channel of 50 watts into 4 or 8 ohms. It features one balanced stereo audio input and two unbalanced stereo audio inputs with independent level control for each. A balanced stereo line level output allows the mixed signal to be passed to an assistive listening system or separate amplifier. The OME-CS31-SA-HDBT's USB system integrates a USB 2.0 host over HDBaseT with a local USB 3.0 and connections for four peripheral devices such as cameras, speakerphones, interactive displays, keyboards, mice, or storage devices.

The OME-CS31-SA-HDBT includes unique capabilities intended for education applications. Ducking automatically lowers the level on all other program audio sources when the teacher speaks into their microphone connected to the balanced line input. PA sense mutes the output of the amplifier whenever it detects activity on the school public address system. Both features ensure important lesson material and announcements are heard clearly.

For control, the OME-CS31-SA-HDBT includes dual Ethernet ports and two RS-232 ports for automated operation by the switcher itself or integration with Velocity™ and third-party control systems. The compact enclosure allows the OME-CS31-SA-HDBT to be mounted in a variety of locations such as behind a display or under a desk or table.

## Applications

- Classrooms**  
 In addition to remote and local AV switching, audio amplification, USB routing, and control needed by modern classrooms, the OME-CS31-SA-HDBT provides additional features for education environments including ducking program audio for an instructor microphone and muting the system for public address messages.
- Conference Rooms**  
 The OME-CS31-SA-HDBT is an all-in-one solution for hybrid meeting spaces that need remote and local AV switching, audio amplification, USB routing, and display control.

## Key Features

- 3x1 AV switcher with one HDBaseT® input, two HDMI® inputs, and one HDMI output.
- HDBaseT input supports extension of HDMI, Ethernet, power, control, and USB 2.0 data up to 330 feet (100 meters).
- USB system integrates USB 2.0 host over HDBaseT with local USB 3.0 type B host port and four type A peripheral ports.
- 2 x 25 watts @ 4/8 ohms amplifier (stereo or dual mono) or 1 x 50 watts @ 4/8 ohms (bridged).
- One balanced stereo line level input and two unbalanced stereo line level inputs on 3.5 mm connections.
- Balanced stereo line level output allows the mixed signal to be passed to an assistive listening system or separate amplifier.
- Powerful on-board digital signal processing
  - » Mix 3 line inputs, de-embedded HDMI audio, and USB audio to the amplifier and line outputs.
  - » Mix 3 line inputs and de-embedded HDMI audio to the USB audio output.
  - » Acoustic Echo Cancellation (AEC) automatically eliminates echo for remote USB audio.
- Supports mixing 3 line inputs, de-embedded HDMI, and USB audio to the amplifier and line outputs.
- Ducking lowers the level of all inputs when audio, such as a teacher microphone, is present on the balanced audio input.
- Supports audio mute with contact closure or PA sense so announcements can be heard clearly.
- Dual Ethernet ports and integrated network switch allows a single connection to an AV LAN for IP control of a display and the switcher.
- Two RS-232 ports for control of the switcher or peripheral devices.
- Two digital I/O ports for automated control from occupancy sensors or other third party devices.
- 5V USB charging port for powering external devices such as a Bluetooth® receiver.
- Energy Star® qualified for power efficiency and cost savings.
- Automatic display control changes display power state via CEC, IP, or RS-232 based on active or standby mode of the switcher or status of occupancy sensors connected to the digital I/O ports.
- Auto-switching selects active input when sources are connected or if there is a change in source power status.
- Manages EDID communications with the source through the connected display's EDID or internally stored EDID
- HDCP 2.2 compliant.
- 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling.
- Supports HDR10, HLG, and Dolby® Vision™ HDR formats.
- Intuitive GUI-based configuration using integrated web server.
- Front panel LED indicators provide status for power, input selection, and LAN.
- Low profile enclosure for mounting behind a display or under a desk or table.

## Specifications

| Video                             |   |  |
|-----------------------------------|---|--|
| Signal                            | Input - HDMI, HDBaseT<br>Output - HDMI  |  |
| Copy Protection                   | HDCP 2.2  |  |
| Pixel Clock                       | HDMI: 600 MHz, HDBaseT: 300 MHz   |  |
| UHD/HD/SD                         | 4096x2160 (DCI) @ 24/25/30/50/60 <sup>(1)</sup> Hz<br>3840x2160 (UHD) @ 24/25/30/50/60 <sup>(1)</sup> Hz<br>1920x1080p @<br>23.97/24/25/29.97/30/50/60 Hz<br>1920x1080i @ 50/60 Hz<br>1280x720p @ 30/50/60 Hz | 720x576p @ 50 Hz<br>720x576i @ 25/50 Hz<br>720x480p @ 60 Hz<br>640x480p @ 60 Hz<br>640x480i @ 60 Hz      |
| VESA<br>All resolutions are 60 Hz | 2560x2048<br>2560x1600<br>2048x1536<br>1920x1200<br>1680x1050<br>1600x1200<br>1600x900<br>1440x900<br>1400x1050   | 1366x768<br>1360x768<br>1280x1024<br>1280x800<br>1280x768<br>1152x768<br>1024x768<br>800x600<br>640x480  |
| VESA 21:9                         | 5120x2160 @ 30 Hz 4:4:4<br>3840x1600 @ 60 Hz 4:4:4<br>3840x1600 @ 30 Hz 4:4:4<br>3440x1440 @ 60 Hz 4:4:4  | 3440x1440 @ 50 Hz 4:4:4<br>3440x1440 @ 30 Hz 4:4:4<br>2560x1080 @ 60 Hz 4:4:4<br>2560x1080 @ 30 Hz 4:4:4 |
| 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™ @ 60 Hz   |  |

| Audio                     |  |   |  |
|---------------------------|--|---|--|
| HDMI Pass-Through Formats | LPCM 2.0<br>LPCM 5.1<br>LPCM 7.1   | Dolby® Digital<br>Dolby Digital Plus™<br>Dolby TrueHD<br>Dolby Atmos® | DTS® Digital Surround™<br>DTS-HD Master Audio™<br>DTS:X® |
| Bit Depth                 | Up to 24 bits  |   |  |
| Sample Rate               | 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz   |   |  |
| <b>Analog Audio</b>       |  |   |  |
| Format                    | Stereo 2-Channel   |   |  |
| Balanced Input            | +4 dBu   |   |  |
| Unbalanced Input          | -10 dBV  |   |  |
| Amplifier Output          | 2 x 25 W @ 4 or 8 Ω<br>Frequency Response: 20 Hz to 20 kHz +/- 2 dB<br>THD+N: < 0.1% @ 1 kHz<br>SNR: 85 dB |   |  |
| Balanced Output           | +4 dBu<br>Frequency Response: 20 Hz to 20 kHz +/- 0.5 dB<br>THD+N: < 0.025% from 20 Hz to 20 kHz           |   |  |

| USB               |                                |
|-------------------|--------------------------------|
| Signal            | 3.0                            |
| Maximum Data Rate | 5 Gbps                         |
| Internal Hubs     | 2 USB hubs / internal USB hubs |

| Ethernet                |  |
|-------------------------|--|
| Port                    | 2 x RJ45   |
| Standards and Protocols | HTTP, HTTPS, Telnet, SSH, JSON over WebSockets                         |
| Speeds                  | 10/100/1000 Mbps   |
| Addressing              | DHCP, Static – selectable through built-in web server and API commands |

| RS-232     |  |
|------------|--|
| Port       | 2 x 3-pin captive screw                            |
| Use        | Unit and external device control and configuration |
| Baud Rates | 2400, 4800, 9600, 19200, 38400, 57600, 115200      |
| Data Flow  | Bidirectional                                      |

| CEC        |                                     |
|------------|-------------------------------------|
| Ports      | 1 x HDMI OUT, Type A, 19-pin female |
| Triggering | Through HDMI                        |

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

| Buttons and Indicators                                |  |
|---|--|
| <b>Buttons:</b><br>INPUT                              | 1 x momentary, tact-type                         |
| <b>Indicators:</b><br>PWR<br>LAN, LINK, IN1, IN2, IN3 | 1 x LED, multicolor, green/red<br>5 x LED, green |

| Connectors                |                           |
|---------------------------|---------------------------|
| HDMI IN                   | 2 x Type A, 19-pin female |
| HDMI OUT                  | 1 x Type A, 19-pin female |
| HDBaseT IN                | 1 x RJ45                  |
| HOST                      | 1 x USB type B, female    |
| MIC                       | 1 x RJ45                  |
| VOICE L/R                 | 1 x 5-pin captive screw   |
| L/R                       | 2 x 3.5 mm mini-stereo    |
| 5V                        | 1 x USB type A, female    |
| FW                        | 1 x USB type C, female    |
| LAN                       | 2 x RJ45                  |
| TRIGGER I/O               | 2 x 4-pin captive screw   |
| RS-232                    | 2 x 3-pin captive screw   |
| PA SENSE TRIGGER          | 1 x 2-pin captive screw   |
| PA SENSE GND/25V/75V/100V | 1 x 4-pin captive screw   |
| AMP OUT                   | 1 x 4-pin captive screw   |
| AUDIO OUT                 | 1 x 5-pin captive screw   |
| HUB                       | 4 x USB type A, female    |
| 24V / 5A                  | 1 x 4-pin DIN             |

| Environmental           | Fahrenheit                 | Celsius    |
|-------------------------|----------------------------|------------|
| Operating Temperature   | +32 to +122                | 0 to +50   |
| Storage Temperature     | -4 to +140                 | -20 to +60 |
| Operating Humidity (RH) | 20% to 90%, non-condensing |            |

| Power                 |   |
|-----------------------|---|
| Consumption (max.)    | 95.3 W  |
| BTU/h                 | 325.2   |
| External Power Supply | 100 - 240 V AC, 50/60 Hz<br>Output: 24 V / 5 A DC |

| Dimensions (H x W x D) | Inches              | Millimeters     |
|------------------------|---------------------|-----------------|
| Unit                   | 0.98 x 11.81 x 8.27 | 25 x 300 x 210  |
| Power Supply           | 1.6 x 2.6 x 6.2     | 40.6 x 66 x 157 |

| Weight | Pounds | Kilograms |
|--------|--------|-----------|
| Device | 3.8    | 1.7       |

| Certification |  |
|---------------|--|
| Device        | CE, RoHS, FCC                          |
| Power Supply  | CE, FCC, UL, CUL, TUV-GS, CB, PSE, CCC |

| Compliance |     |
|------------|-----|
| NDA-889    | Yes |

  

| Warranty |  |
|----------|--|
| 3 years  | View the full warranty information here: <a href="https://atlon.com/warranty">https://atlon.com/warranty</a> |

## Footnotes

(1) 4K/UHD @ 60 Hz over HDBaseT only supports 4:2:0.

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