## Introduction

The Atlona **AT-USB-EX350-KIT** is a data only USB 3.2 extender kit. It supports simultaneous extension of 5 Gbps USB 3.2 Gen 1 data and 480 Mbps USB 2.0 data up to 330 feet (100 meters) using a single, cost-effective Category 6A U/FTP cable.

The USB-EX350-KIT is ideal for video conferencing or remote instruction applications where high data rate USB components including laptops, computers, cameras, microphones, and speakers are in different areas of the room.

The USB-EX350-KIT is comprised of two endpoints. The host endpoint includes a USB-C port for connection to hosts such as laptops, computers, or other AV equipment that supports USB connectivity including many Omega™ Series products. The device endpoint includes three USB-A ports and one USB-C port for connection to 4K cameras, conferencing bars, microphones, speakers, and other peripherals. Bidirectional remote power allows the kit to be powered by the included power supply connected to either the host or device endpoint.

An Ethernet connection on the host endpoint provides access to advanced integration capabilities including:
•    Monitor system and port status for validation and troubleshooting.
•    Configure VBUS modes.
•    IP to RS-232 translation supporting bi-directional serial control through the device endpoint.

The USB-EX350-KIT is a great solution for routing USB 3.2 Gen 1 data up to 5 Gbps between components at distances greater than is possible with traditional cabling.

## Applications

•    **Education**
      Ideal for remote instruction applications where higher data rate USB peripherals such as 4K cameras are located at distances of up to 330 feet (100 meters) from a classroom computer or teacher laptop.

•    **Commercial**
      Provides access to higher data rate USB peripherals such as 4K cameras that are located at distances of up to 330 feet (100 meters) from video conferencing software running on a meeting/conference room computer or laptop.

## Features

- Point-to-point USB extender kit for devices such as cameras, speakers, microphones and other peripherals.

- Extends USB data up to 330 feet (100 meters) using a single Category 6A U/FTP cable.

- Supports USB 3.2 Gen 1 data rates up to 5 Gbps.

- Supports USB 2.0 data rates up to 480 Mbps.

- 1 x USB-C interface for host connection.

- 3 x USB Type A and 1 x USB-C for peripheral connections.

- Bidirectional remote power allows the kit to be powered by either the host or device processor.

- Ethernet port for monitoring, management, and configuration.

- Individual VBUS control of the USB ports on the device processor.

- IP to RS-232 translation for bi-directional RS-232 communications through the device processor.

- Compact enclosures can be mounted in furniture, behind a display, or above a projector.

- Kit includes host processor, device processor, power supply, and mounting brackets.

## Specifications

| USB Capabilities | |
|---|---|
| Protocol Support | USB 2.0, USB 3.2 Gen 1 (5 Gbps) |
| USB 2.0 Capabilities[1] | Maximum hubs: 9<br>Maximum hub tiers: 5 (including the one in the AT-USB-EX350-KIT)<br>Maximum devices: 7<br>Maximum endpoints: 14 (IN), 15 (OUT) |
| USB 3.2 Gen 1 Capabilities[1] | Maximum hub tiers: 5 (including the one in the AT-USB-EX350-KIT)<br>Maximum end points: 126 |
| USB Transfer Types | Control, Bulk, Interrupt, Isochronous |
| Internal Hubs | USB 2.0: 1 Hub, 1 Tier<br>USB 3.2 Gen 1: 2 Hubs, 2 Tiers |
| USB Power | Host: No Power<br>Device: max 1.5A per port, 3.2A total across all device ports |
| USB Device VBUS Control | Per-port settings: Follow USB Host, Always High, Always Low |
| Bandwidth[2] | USB 2.0: 480 Mbps<br>USB 3.2 Gen 1: 5 Gbps |

| Ethernet | |
|---|---|
| Port | 1 x RJ45 on Host Endpoint |
| Standards and Protocols | HTTP, HTTPS, Telnet, SSH, JSON over WebSockets, TCP Proxy for RS-232, NTP |
| Speeds | 10/100 Mbps |
| Addressing | DHCP, Static – selectable through built-in web server and API commands |
| 802.1x Support | PEAP-MSCHAPv2, EAP-TLS |

| RS-232 | |
|---|---|
| Port | 1 x 3-pin captive screw on Device Endpoint |
| Use | External device control via TCP Proxy |
| Baud Rates | 9600, 19200, 38400, 57600, 115200 |
| Data Flow | Bidirectional |

| Distance | Feet | Meters |
|---|---|---|
| CAT 6a U/FTP - straight run | 330 | 100 |
| CAT 6a U/FTP - through patch panel/coupler | 295 | 90 |
| CAT 6a UTP - either straight run or through patch panel/coupler | 230 | 70 |
| CAT 5e UTP - either straight run or through patch panel/coupler | 164 | 50 |

| Indicators | |
|---|---|
| **Host Endpoint**<br>PWR<br>LINK<br>FW[3] | <br>1 x LED, green<br>1 x LED, green<br>1 x LED, amber |
| **Device Endpoint**<br>PWR<br>LINK<br>FW[3] | <br>1 x LED, green<br>1 x LED, green<br>1 x LED, amber |

## Specifications (continued)

| Connectors (Host Endpoint) | |
|---|---|
| USB HOST (5G) | 1 x USB-C, locking |
| MGMT | 1 x USB-C |
| LAN | 1 x RJ45 |
| HDBT-USB3 | 1 x RJ45 |
| 48V - 1.36A[4] | 1 x 2-pin captive screw |
| Connectors (Device Endpoint) | |
| USB DEVICES (5G) | 3 x USB-A<br>1 x USB-C, locking |
| DEBUG | 1 x USB-C |
| RS-232 | 1 x 3-pin captive screw |
| HDBT-USB3 | 1 x RJ45 |
| 48V - 1.36A[4] | 1 x 2-pin captive screw |

| Environmental | Fahrenheit | Celsius |
|---|---|---|
| Operating Temperature | +32 to +104 | 0 to +40 |
| Storage Temperature | -4 to +158 | -20 to +70 |
| Operating Humidity (RH) | 20% to 90%, non-condensing | |

| Power | Powered from | Total System Power | Host Endpoint | Device Endpoint |
|---|---|---|---|---|
| Consumption (system under full USB device load) | Host Endpoint | 33 W (max.) | 25.4 BTU/h | 21 BTU/h |
| | Device Endpoint | 29 W (max.) | 11.1 BTU/h | 25 BTU/h |
| External Power Supply | Input: 100 - 240 V AC, 50/60 Hz<br>Output: 48 V DC / 1.36 A | | | |

| Dimensions (H x W x D) | Inches | Millimeters |
|---|---|---|
| Host Endpoint | 0.91 x 5.31 x 3.94 | 23 x 135 x 100 |
| Device Endpoint | 0.91 x 5.31 x 3.94 | 23 x 135 x 100 |

| Weight | Pounds | Kilograms |
|---|---|---|
| Host Endpoint | 0.68 | 0.31 |
| Device Endpoint | 0.71 | 0.32 |

| Certification | | |
|---|---|---|
| Extender Kit | CE, FCC, UKCA, RCM | |
| Power Supply | CE, FCC, UKCA, RCM, UL | |

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

| Warranty | |
|---|---|
| Device | To view the product warranty, use the following link:<br>https://atlona.com/warranty |

*Refer to footnotes on the next page.*

## Footnotes

(1) A USB device can have multiple In and Out endpoints. An In endpoint sends data to a USB Host, while an Out endpoint receives data from a USB Host.

(2) Specified bandwidth is the total available bandwidth.  Actual bandwidth available for payload data will be reduced by USB and transport overhead.  Practical payload data rates will be approximately 320 Mbps for USB 2.0 and 3.8 Gbps for USB 3.0.

(3) Kit can be powered from either end.

(4) Used to indicate the state of the HDBT-USB3 firmware.

## Copyright, Trademark, and Registration

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