

4K HDR Four-Input HDMI Switcher with Auto-Switching and Return Optical Audio

AT-JUNO-451 / AT-JUNO-451-HDBT



The Atlona **JunoX™ 451 HDBT (AT-JUNO-451-HDBT)** is a 4x1 switcher for high dynamic range (HDR) formats. The JunoX 451 HDBT features three HDMI inputs, plus an HDBaseT input for receiving video, embedded audio, and Ethernet over distances up to 330 feet (100 meters). It is HDCP 2.2 compliant and supports 4K/UHD video @ 60 Hz with 4:4:4 chroma sampling, as well as HDMI data rates up to 18 Gbps. The JunoX 451 HDBT is ideal for receiving 4K HDR over HDBaseT from an Atlona Opus™ Series matrix switcher, and is also compatible with the Atlona UHD-PRO3, UHD-CAT, and SW Series for data rates up to 10 Gbps. It includes EDID management features and automatic input switching. The JunoX 451 HDBT also supports the HDMI Audio Return Channel for receiving digital audio from a television, and includes a TOSLINK digital audio output for sending this audio to an AV receiver or soundbar. This JunoX Series switcher can be controlled via Ethernet, RS-232, and IR. A handheld IR remote control is included.

The Atlona **JunoX™ 451 (AT-JUNO-451)** provides the same features at the AT-JUNO-451-HDBT, except that the HDBaseT input is replaced with an HDMI port.

Package Contents

AT-JUNO-451

- 1 x AT-JUNO-451
- 1 x 4-pin captive screw connector
- 2 x Mounting plates
- 4 x Rubber feet
- 4 x Screws
- 1 x IR remote control
- 1 x DC 5V power supply
- 1 x IEC cord
- 1 x Installation Guide

AT-JUNO-451-HDBT

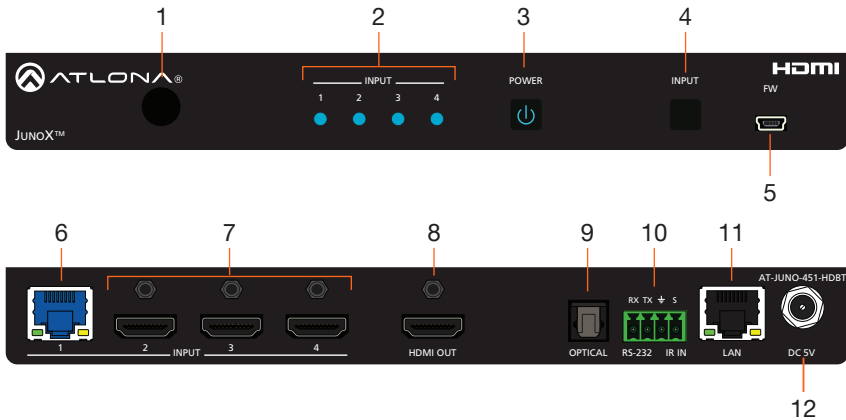
- 1 x AT-JUNO-451-HDBT
- 1 x 4-pin captive screw connector
- 2 x Mounting plates
- 4 x Rubber feet
- 4 x Screws
- 1 x IR remote control
- 1 x DC 5V power supply
- 1 x IEC cord
- 1 x Installation Guide



IMPORTANT: Visit <http://www.atlona.com/product/AT-JUNO-451-HDBT> and <http://www.atlona.com/product/AT-JUNO-451> for the latest firmware updates and User Manual.



Panel Descriptions (AT-JUNO-451-HDBT shown)



- | | |
|---|---|
| <p>1 IR Window
Receives IR signals from the included IR remote.</p> <p>2 Input Indicators
These LED indicators glow solid blue to indicate the active input.</p> <p>3 POWER
Press this button to power-on or power-off the unit.</p> <p>4 INPUT
Press and release this button to cycle through each of the inputs.</p> <p>5 FW
Connect a mini USB cable to this port to update the firmware.</p> <p>6 HDBaseT Input
This port is only available on the AT-JUNO-451-HDBT: Connect a compatible transmitter to this port using an Ethernet cable. Ethernet is not passed through this port. The AT-JUNO-451 replaces this port with an HDMI input.</p> <p>7 HDMI Inputs
Connect an HD/UHD source to each of these HDMI ports.</p> | <p>8 HDMI OUT
Connect an HDMI cable from this port to a display or other sink device. This output supports multichannel audio.</p> <p>9 OPTICAL
Connect an optical audio cable from this TOSLINK port to an audio output device. This port can be used as part of the Audio Return Channel (ARC). Refer to the User Manual for more information.</p> <p>10 RS-232 / IR IN
Connect the included 4-pin captive screw block to this port. Refer to RS-232 / IR Connector (page 3) for wiring information.</p> <p>11 LAN
Connect an Ethernet cable from this port to a Local Area Network (LAN). This port only supports direct control of the unit.</p> <p>12 DC 5V
Connect the included 5 V DC power supply to this power receptacle.</p> |
|---|---|

IR Remote Control

Both the AT-JUNO-451 and AT-JUNO-451-HDBT include an IR remote control that can be used to operate the unit from a remote location.

1 On / Off buttons

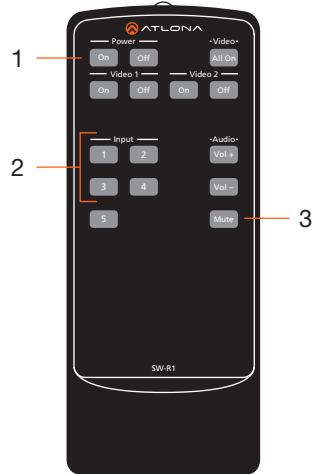
Press the **On** button to power-on the unit.
Press the **Off** button to power-off the unit.

2 Input

Press these buttons (1 - 4) to select the desired input.

3 Mute

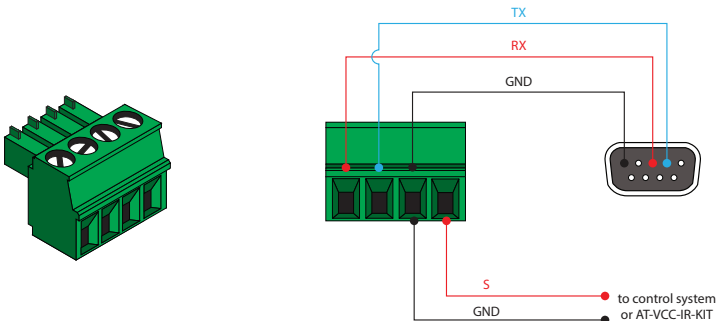
Press this button to toggle audio muting on the **HDMI OUT** port. The **Output 1** toggle switch, in the web GUI, will also change to reflect the current muting state. Refer to the User Manual for more information.



RS-232 / IR Connector

Both the AT-JUNO-451 and AT-JUNO-451-HDBT provide RS-232 and IR control, using the included four-pin captive screw connector. Electrical IR or RS-232 signals, from a control system, can be used for control. Atlona recommends the AT-LC-CS-IR-2M (sold separately) for easy connection to the captive screw connector.

1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16" (5 mm) from the insulation of each wire.
3. Insert the wires into the correct terminal on the included captive screw connector, as shown below.
4. Tighten the screws to secure the wires. Do not use high-torque devices as this may damage the screws and/or connector.



Installation

- **AT-JUNO-451-HDBT:**

1. Connect a compatible transmitter to the HDBaseT (**INPUT 1**) port on the AT-JUNO-451-HDBT.



NOTE: HDR formats are only supported when connected to an Atlona Opus matrix.

2. Connect an HDR source to each of the three HDMI inputs (**INPUT 2 - INPUT 4**).

- **AT-JUNO-451:**

3. Connect an HDR source to each of the four HDMI inputs (**INPUT 1 - INPUT 4**).

- **AT-JUNO-451 / AT-JUNO-451-HDBT:**

4. Connect an optical audio cable from the **OPTICAL** port to a sound bar or other audio output device. Audio Return Channel (ARC) is supported. Refer to the User Manual for more information.
5. Connect an Ethernet cable from the **LAN** port to the Local Area Network (LAN).
6. Connect the included 4-pin captive screw block to the **RS-232 / IR IN** port. Refer to [RS-232 / IR Connector \(page 3\)](#) for wiring information.
7. Connect the included 5 V DC power supply to the **DC 5V** power receptacle.
8. Connect the power supply to an available electrical outlet.

Cable Recommendation Guidelines

Refer to the tables below for recommended cabling when using Atlona products with HDBaseT technology. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars. *These tables are for guidance, only. Performance may vary, based on environmental factors.*



IMPORTANT: Stranded or patch cables are not recommended due to performance issues.

Core	Shielding	CAT5e	CAT6	CAT6a	CAT7
Solid	UTP (unshielded)	■	■■■	■■■■■	N/A
	STP (sheilded)	■■	■■■■■	■■■■■■■	■■■■■■■
Performance Rating (MHz)		350	500	600	800

Cable*	Max. Distance @ 4K	Max. Distance @ 1080p
CAT5e / CAT6	295 feet (90 meters)	330 feet (100 meters)
CAT6a / CAT7	330 feet (100 meters)	330 feet (100 meters)

*Atlona recommends TIA/EIA 568-B termination for optimal performance.



IP Configuration

By default, the AT-JUNO-451 / AT-JUNO-451-HDBT are set to DHCP mode, allowing a DHCP server (if present) to assign the unit an IP address.

1. Make sure the unit is powered.
2. Press and hold the **INPUT** button for approximately 10 seconds.
3. Release the button once the **POWER** button begin to flash. The number of flashes will indicate the currently selected IP mode:

POWER button flashes	Description	
Two	Static IP mode	IP address: 192.168.1.254 Subnet mask: 255.255.0.0 Gateway: 192.168.1.1
Four	DHCP mode	

AMS 2.0

For easy configuration of Atlona devices, AMS 2.0 is available from <https://atlona.com/AMS> for free. Two options can be used for installation: The free Linux-based software download or the easy-to-install server hardware (AT-AMS-HW).

Once AMS has been set up:

1. Open a browser on the same network as AMS 2.0 and go to the IP of AMS 2.0. View the AMS 2.0 installation instructions on how to find the IP of the software, if necessary.
2. Enter the login information on the AMS 2.0 web page, then click the **Login** button.
3. View the AT-JUNO-451 or AT-JUNO-451-HDBT manual for routing and configuration information.

Web GUI

Both the AT-JUNO-451 and AT-JUNO-451-HDBT include a built-in web GUI, which allows easy management and control of all features. Follow the instructions below to access the web GUI.

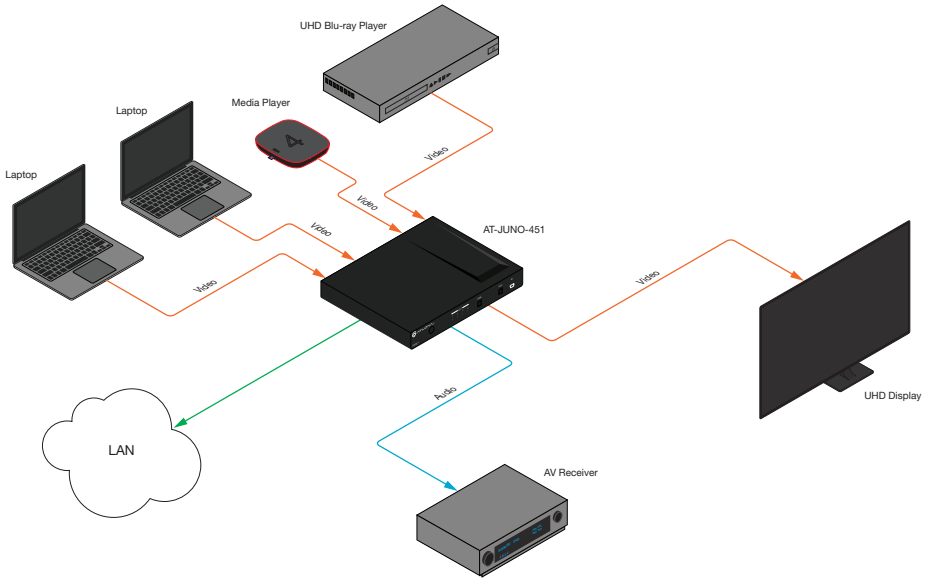
1. Set the IP mode of the unit. Refer to the above instructions for more information.
2. Connect an Ethernet cable from the **LAN** port on the AT-JUNO-451, to the Local Area Network (LAN).
3. Use an IP scanner to determine the IP address of the AT-JUNO-451.
4. Launch a web browser and enter the IP address of the unit.
5. The AT-JUNO-451 **Login** page will be displayed.
6. Enter the following information on the **Login** page.

Login: **root**
Password: **Atlona**

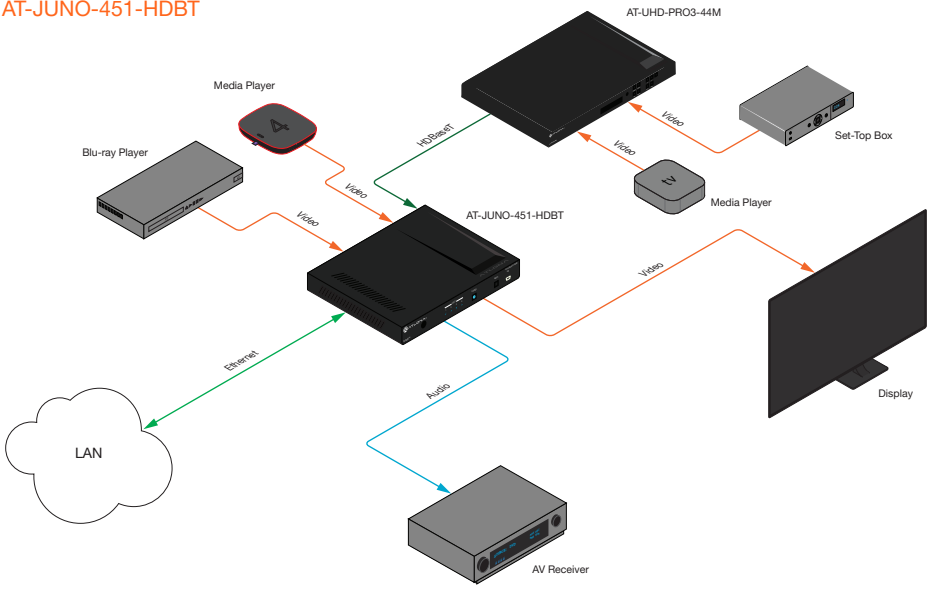
7. Click the **Login** button.

Connection Diagrams

AT-JUNO-451



AT-JUNO-451-HDBT

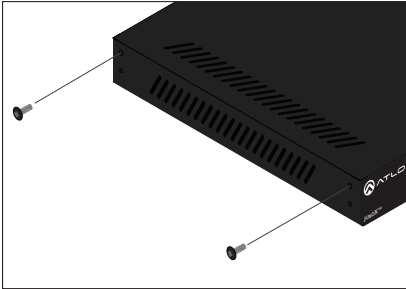




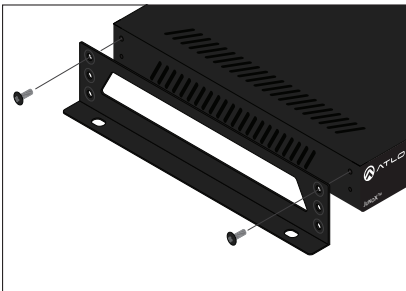
Mounting Instructions

Both the AT-JUNO-451 and AT-JUNO-451-HDBT include two mounting brackets, which can be used to attach the unit to any flat surface. Use the two enclosure screws, on the sides of the unit to attach the mounting brackets.

1. Using a small Phillips screwdriver, remove the two screws from the left side of the enclosure.



2. Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.
3. Use the screws from Step 1 to attach the mounting bracket.



4. Repeat steps 1 and 2 to attach the second mounting bracket to the opposite side of the unit.
5. Mount the unit to a flat surface using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.



NOTE: Mounting brackets can also be inverted to mount the unit under a table or other flat surface.

Troubleshooting

Problem	Solution
How do I update the firmware?	<ul style="list-style-type: none"> Firmware and instructions can be found and downloaded from the firmware tab at http://www.atlona.com/product/AT-JUNO-451 and http://www.atlona.com/product/AT-JUNO-451-HDBT.
RS-232 and/or IR control is not working.	<ul style="list-style-type: none"> Verify that the 4-pin captive screw block is wired correctly. Refer to RS-232 / IR Connector (page 3) for wiring instructions. Check that the included power supply is connect to an active AC electrical outlet.
What type of control can be used with the AT-JUNO-451 and AT-JUNO-451-HDBT?	<ul style="list-style-type: none"> The AT-JUNO-451 can be controlled using RS-232, TCP/IP, the web GUI, or AMS.
Auto-switching is not working.	<ul style="list-style-type: none"> The AT-JUNO-451 and AT-JUNO-451-HDBT both come with auto-switching disabled. Auto-switching can be enabled through AMS, the web GUI, or using the AutoSW command. Refer to the User Manual for more information.
I'm unable to use HDR formats on the INPUT 1 (HDBaseT) port.	<ul style="list-style-type: none"> The AT-JUNO-451-HDBT must be used with an Atlona Opus matrix in order to pass HDR formats.



Notes

Notes



Notes

English Declaration of Conformity

The English versions can be found under the resources tab at:

<https://atlona.com/product/at-juno-451/>.

<https://atlona.com/product/at-juno-451-hdbt/>.



Chinese Declaration of Conformity 中国RoHS合格声明

由SKU列出於:

<https://atlona.com/about-us/china-rohs/>.



HIGH-DEFINITION MULTIMEDIA INTERFACE

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI licensing Administrator, Inc.