ATLONA®
a **PANDUIT** company

Three-Input
Switcher for HDMI and VGA
with HDBaseT™ Output

AT-HDVS-150-TX
AT-HDVS-150-TX-PSK

Atlona Manuals
Switchers

Version Information

Version	Release Date	Notes
3	Apr 2024	Updated warranty information; new color format

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Operating Notes

- This product does not support multichannel audio.

⚠️ **IMPORTANT**: Visit http://www.atlona.com/product/AT-HDVS-150-TX and http://www.atlona.com/product/AT-HDVS-150-TX-PSK for the latest firmware updates and User Manual.

Warranty

To view the product warranty, use the following link or QR code:

https://atlona.com/warranty/.

Safety and Certification

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCT THE RISK OF
ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE
TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS
INSIDE REFER SERVICING TO
QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the product.

The information bubble is intended to alert the user to helpful or optional operational instructions in the literature accompanying the product.

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this product near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of a polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.

11. Only use attachments/accessories specified by Atlona.

12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.

13. Unplug this product during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.

FCC Compliance

Copyright, Trademark, and Registration

Table of Contents

Introduction

The Atlona **AT-HDVS-150-TX** is a 3×1 switcher with display control for HDMI and VGA transmission over HDBaseT™. It features two HDMI inputs plus a VGA input with 3.5mm audio connector. The AT-HDVS-150-TX combines the benefits of a switcher with built-in auto-switching and the advantages of long-distance HDBaseT signal extension over a single cable. HDMI signals up to 4K/UHD @ 60Hz with embedded audio, VGA input signals up to 1920×1200 video, and control signals can be extended up to 230 feet (70 meters). The switcher enables auto display on/off, auto-switching, along with other features. The switcher receives power from the AT-HDVS-150-RX using Power over Ethernet. The AT-HDVS-150-TX is ideal for long distance transmission and display control in corporate or educational settings using analog and digital sources.

The Atlona **AT-HDVS-150-TX-PSK** is identical to the AT-HDVS-150-TX, with the addition of an external power supply. This makes it ideal for extending AV and control directly to a projector with an HDBaseT input. The AT-HDVS-150-TX can serve as the central component of a small, automated AV system through automatic input selection, and by sending RS-232 control commands to the display. With automatic display control capability, the AT-HDVS-150-TX can power the display on or off whenever a source is connected or disconnected from the unit.

Features

- Two HDMI inputs plus a VGA input with 3.5mm audio connector.
- Extends 1080p up to 230 feet (70 meters) and 4K/UHD up to 130 feet (40 meters) using CAT6a/7 cable.
- Automatically changes projector power state based on active or standby mode of the switcher (in conjunction with the AT-HDVS-150-RX). Control signals are transmitted via RS-232.
- Combines analog audio and VGA onto HDBaseT output.
- Field-upgradable via USB interface.
- Includes external power supply (AT-HDVS-150-TX-PSK only) – ideal for point-to-point installations with an HDBaseT-equipped display or projector.
- Front panel input select button.
- Automatic input selection using 5-volt detection.

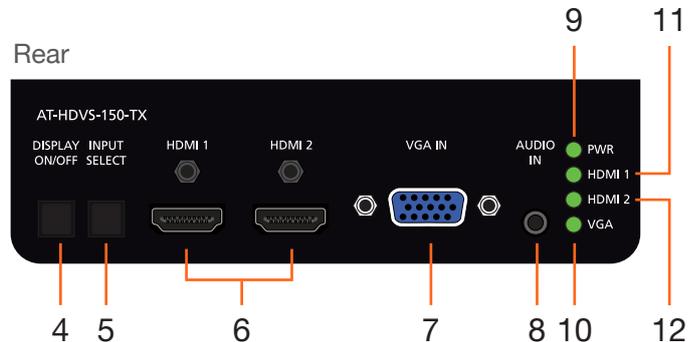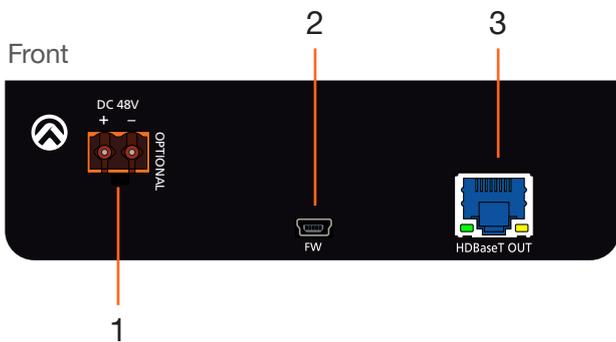# Package Contents

AT-HDVS-150-TX

1 x AT-HDVS-150-TX
1 x Mounting ears (pair)
1 x Installation Guide

AT-HDVS-150-TX-PSK

1 x AT-HDVS-150-TX-PSK
1 x 2-pin Phoenix connector
1 x 48V DC power supply
1 x Mounting ears (pair)
1 x Installation Guide

Panel Description

Front

Rear

1   DC 48V
Connect the power supply to this port to power an HDBaseT receiver, projector, or other PoE device.

> ℹ️ **NOTE:** The **DC 48V** port is only available on the AT-HDVS-150-TX-PSK.

2   FW
Connect a mini USB to USB-A type cable from this port to a computer to update the firmware.
See Updating the Firmware (page 20) for more information.

3   HDBaseT OUT
Use an Ethernet cable to connect an HDBaseT PoE receiver to this port.

4   DISPLAY ON/OFF
Press this button to power-on / power-off the display that is connected to the receiver.

5   INPUT SELECT
Press this button to select the desired input.

6   HDMI 1 / HDMI 2
Connect up to two HD sources using these HDMI ports.

7   VGA IN
Connect a VGA source to this port.

8   AUDIO IN
Connect a 3.5mm mini-stereo audio cable, from an analog audio source, to this port. See Passing Analog Audio (page 12) for more information.

9   PWR
This LED indicator will glow bright green when the switcher is powered.

10   VGA
This LED indicator will glow bright green when the VGA IN port is selected.

11   HDMI 1
This LED indicator will glow bright green when the HDMI 1 port is selected.

12   HDMI 2
This LED indicator will glow bright green when the HDMI 2 port is selected.

Installation

Connection Instructions

AT-HDVS-150-TX / AT-HDVS-150-TX-PSK

1. Use HDMI cables to connect up to two HD sources to the HDMI 1 and HDMI 2 ports on the switcher.

2. Connect a VGA cable from a VGA source to the **VGA IN** port on the switcher.

3. Connect a 3.5 mm mini-stereo cable from the **AUDIO IN** port on the switcher to the analog audio source. This port allows two-channel analog audio to be included when the VGA IN port is selected. See Passing Analog Audio (page 12) for more information.

4. Connect an Ethernet cable, up to 230 feet (70 meters), from the **HDBaseT OUT** port on the switcher to a PoE-compatible receiver (not included). Ethernet cables should use EIA/TIA-568B termination.

   > ⚠ **IMPORTANT**: Using EZ RJ-45 connectors are being used, make sure that each twisted pair does not extend beyond the RJ-45 connector. Exposed twisted-pair wires may cause a short when connected to the **HDBaseT OUT** port.

   No power supply is required for the AT-HDVS-150-TX. This unit will be powered over the Ethernet cable, from an HDBaseT receiver.

AT-HDVS-150-TX-PSK Only

5. Connect the included power supply to the **DC 48V** port. Connect the power supply if the HDBaseT receiver or projector not a PoE-capable device

6. Connect the power supply to an available AC outlet.

Connection Diagram

Audio

HDMI

Control

Display

AT-HDVS-150-RX

HDBaseT

Audio

Audio

AT-PA100-G2

Speakers

AT-HDVS-150-TX

Audio

VGA

HDMI

HDMI

Desktop PC

Laptop

Laptop
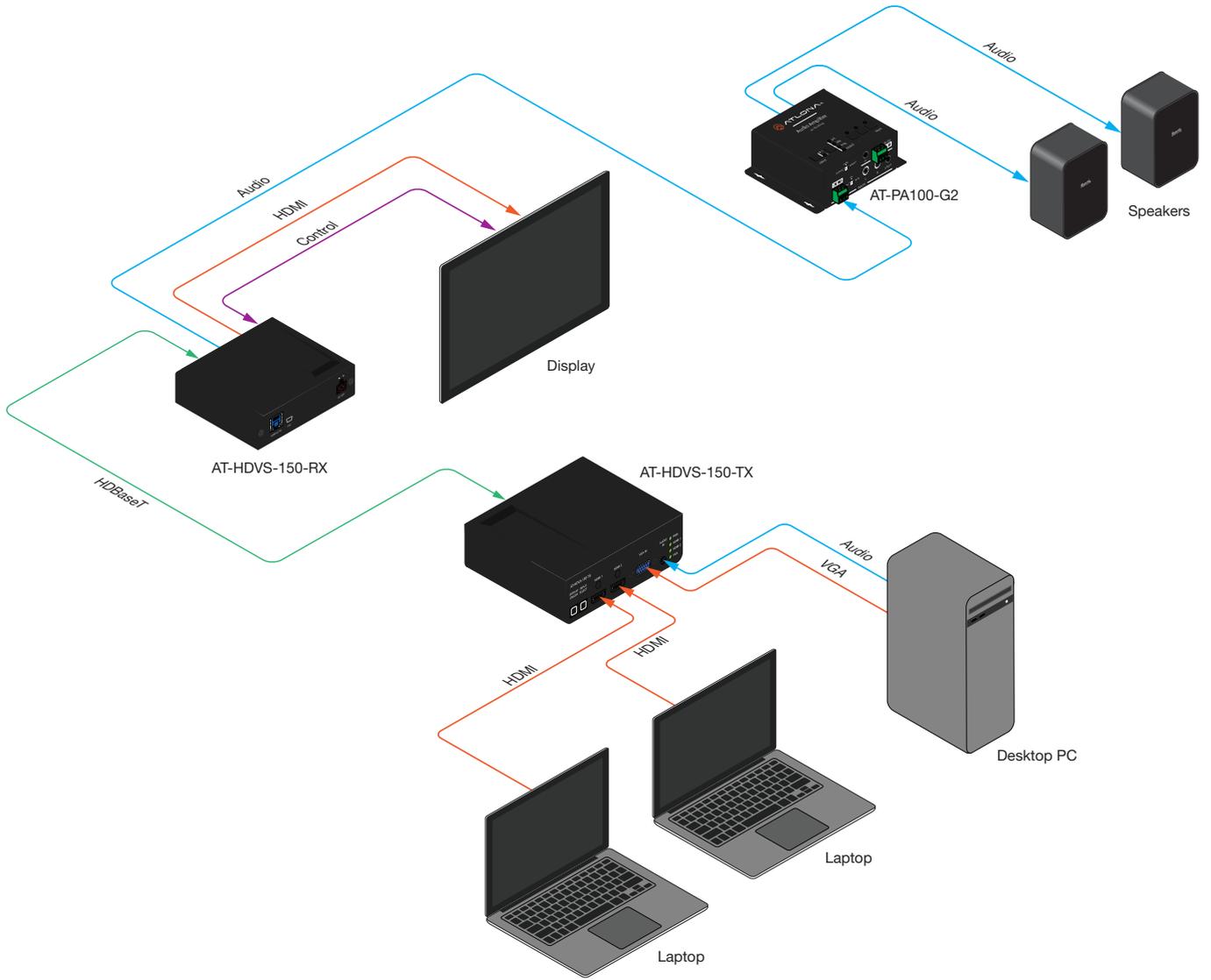
Solution Setup and Configuration Guide

The following sections provide step-by-step instructions for the following topics:

- Toggling Power on the Display
- Selecting the Input
- Passing Analog Audio
- Input Auto Switching
- Display Control

Toggling Power on the Display

When the unit is connected to a compatible receiver and display, pressing the **DISPLAY ON/OFF** button will send a command to set the display power state. This is a programmable button and requires a compatible Atlona receiver.

1. Connect a category cable from the **HDBaseT OUT** port on the AT-HDVS-150-TX to the **HDBaseT IN** port on a compatible receiver. In this example, the AT-HDVS-150-TX is connected to an AT-HDVS-150-RX.

AT-HDVS-150-TX

AT-HDVS-150-RX

2. Connect an HDMI cable from the **HDMI OUT** port on the receiver to a display.

3. Press the DISPLAY ON/OFF button on the AT-HDVS-150-TX. The power state of the display, connected to the receiver, will be toggled.

Selecting the Input

Press the **INPUT SELECT** button to cycle through each of the available inputs on the unit. The unit will always retain the last selected input when the unit is powered-off.

1. Below, the **HDMI 1** LED indicator is bright green, indicating that **HDMI 1** is the active input.

2. Press the **INPUT SELECT** button, to select HDMI 2. The **HDMI 2** LED indicator will turn bright green.
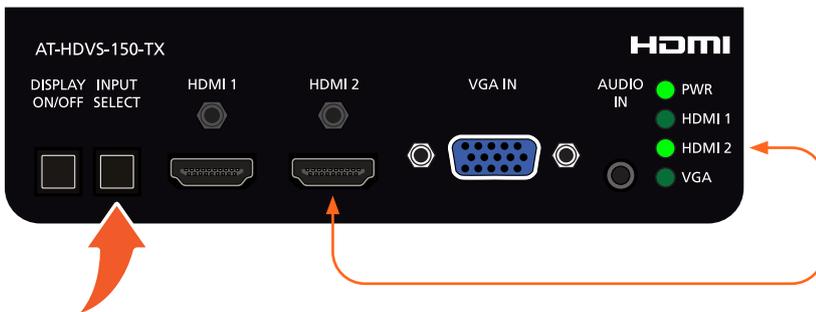

3. Press the **INPUT SELECT** button a third time, to select the **VGA IN** port. The **VGA** LED indicator will turn bright green.

4. Press the **INPUT SELECT** button again to return to **HDMI 1**.

Passing Analog Audio

Both products can pass two-channel analog audio with the VGA signal. In order for the audio to be passed to the receiver, an active VGA source must be connected to the **VGA IN** port and the port must be selected. Analog audio *cannot* be embedded on an HDMI signal.

1. Connect a VGA source to the **VGA IN** port on the transmitter.

2. Connect a 3.5 mm mini-stereo cable from the **AUDIO IN** port to the analog audio source.

3. Press the **INPUT SELECT** button until the **VGA** indicator turns bright green.

from analog audio source
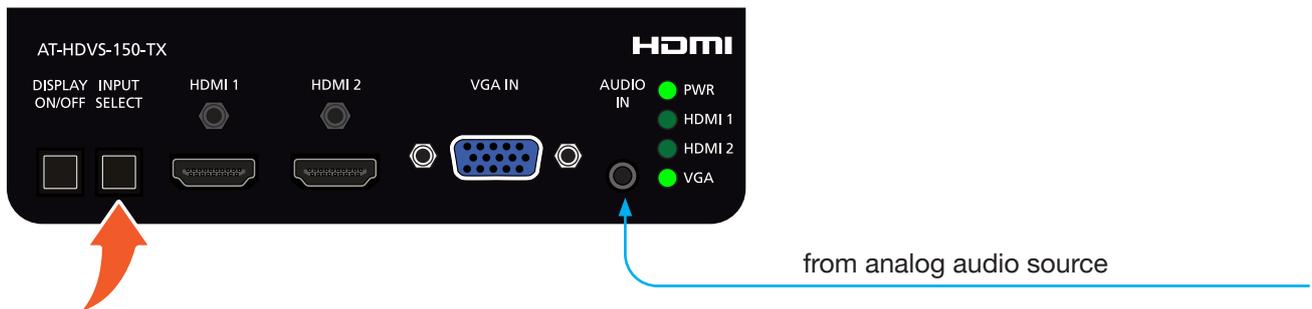
IMPORTANT: The **AUDIO IN** port will pass audio only when both the **VGA IN** port is selected *and* when the **VGA IN** port is connected to an active VGA source. Audio cannot be passed without video.

The example below, shows a desktop PC providing both the audio and video source. However, these signals may be connected to separate sources.

AT-HDVS-150-TX

VGA + Audio

Audio

VGA

Desktop PC
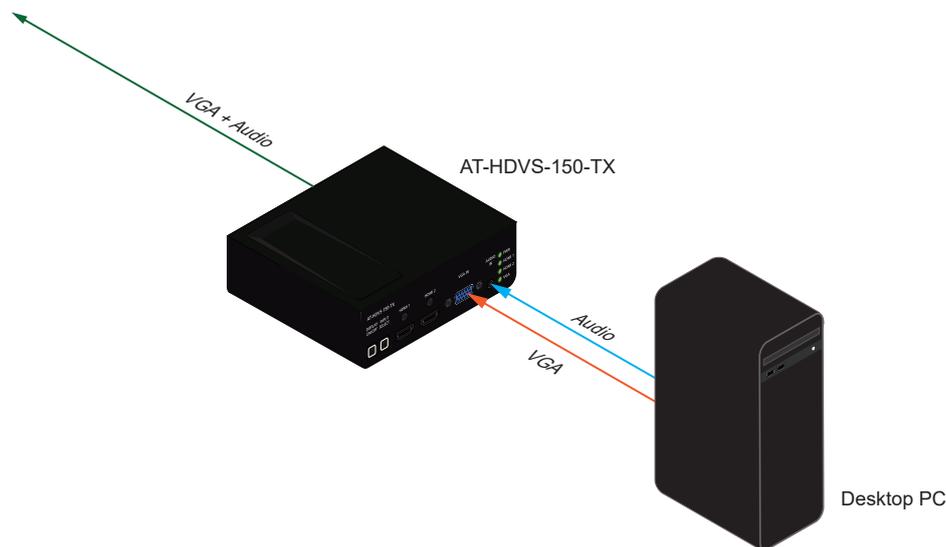
Input Auto Switching

The AT-HDVS-150-TX provides auto-switching capability between HDMI IN 1 and HDMI IN 2, which will automatically switch the input to the most recently-connected or powered source when a source is disconnected. For example, if the connection sequence is **HDMI 2** > **HDMI 1**, and a source is disconnected from **HDMI 1**, then the AT-HDVS-150-TX will automatically switch to the **HDMI 2**. Auto-switching mode is enabled or disabled through the on-screen display (OSD) menu system, and is enabled (On), by default.

> **(i)** **NOTE:** Auto-switching is triggered by a Hot-Plug Detect (HPD) event. If HPD is not detected, then AT-HDVS-150-TX will not switch inputs. VGA does not support HPD. Therefore, the **VGA** port cannot be used in the auto-switching cycle.

1. Connect a category cable from the **HDBaseT OUT** port on the AT-HDVS-150-TX to the **HDBaseT IN** port on the AT-HDVS-150-RX using a category cable (CAT-5e or better). The category cable should not exceed 230 feet (70 meters) in length.

    The AT-HDVS-150-RX must be connected to the AT-HDVS-150-TX, in order to manage auto switching.
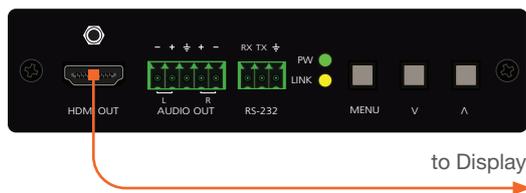
AT-HDVS-150-TX
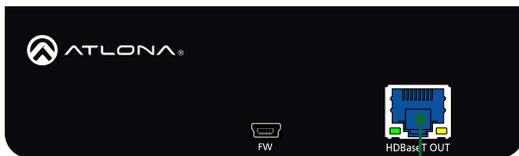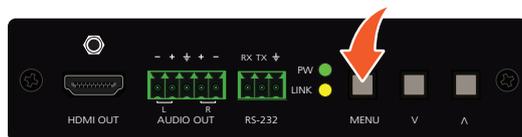
AT-HDVS-150-RX

2. Connect an HDMI cable from the **HDMI OUT** port on the AT-HDVS-150-RX to a display.
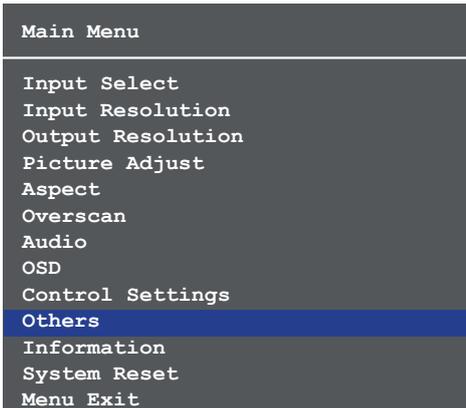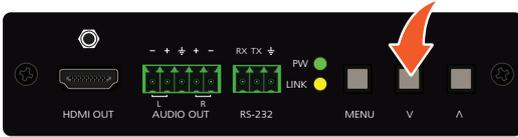

to Display

3. Press the **MENU** button on the front panel of the AT-HDVS-150-RX to display the on-screen display (OSD) menu system.
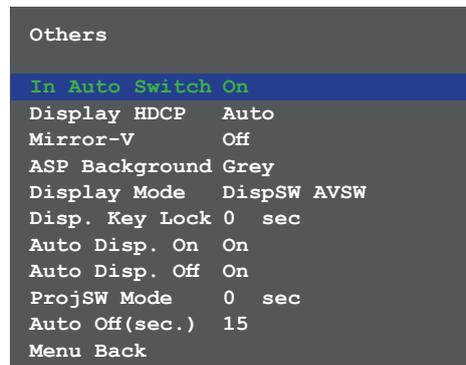
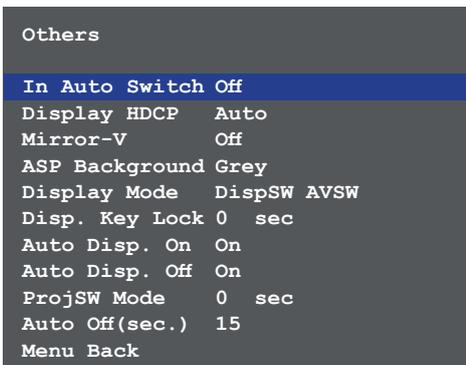4. Press and release the **VOL DN** button until the **Others** menu is highlighted in blue.


```
Main Menu

 Input Select
 Input Resolution
 Output Resolution
 Picture Adjust
 Aspect
 Overscan
 Audio
 OSD
 Control Settings
 Others
 Information
 System Reset
 Menu Exit
```

5. Press and release the **MENU** button to enter the **Others** menu. The **In Auto Switch** option will be highlighted in blue.

6. Press and release the **MENU** button. The **In Auto Switch** text will be displayed in green, indicating that the option can be changed.

7. Press and release the **VOL DN** buttons to change the value to the **On** setting.

```
Others

 In Auto Switch Off
 Display HDCP   Auto
 Mirror-V       Off
 ASP Background Grey
 Display Mode   DispSW AVSW
 Disp. Key Lock 0   sec
 Auto Disp. On  On
 Auto Disp. Off On
 ProjSW Mode    0   sec
 Auto Off(sec.)  15
 Menu Back
```

```
Others

 In Auto Switch On
 Display HDCP   Auto
 Mirror-V       Off
 ASP Background Grey
 Display Mode   DispSW AVSW
 Disp. Key Lock 0   sec
 Auto Disp. On  On
 Auto Disp. Off On
 ProjSW Mode    0   sec
 Auto Off(sec.)  15
 Menu Back
```

8. Press and release the **MENU** button to commit changes. The **In Auto Switch** option will be displayed in white.

9. Highlight the **Menu Back** option, then press the **MENU** button to return to the **Main Menu**.

10. Select the **Menu Exit** option, in the **Main Menu**, and press and release the **MENU** button to exit the menu system.

Display Control

The AT-HDVS-150-RX features a control interface which can be used to program connected transmitters, allowing them to power-on/off displays as well as adjust the appearance of the output image.

In order to configure display control, the control software should be downloaded and installed. The control software is available for download, under the AT-HDVS-150-RX page on the Atlona web site, and supports programming of the following transmitters.

Supported Transmitters		
AT-HDVS-150-TX	AT-HDVS-150-TX-WP	AT-HDVS-150-TX-WP-UK

Installing the Software

1. Download the control software from the Atlona web site.

    a. Go to http://atlona.com/product/at-hdvs-150-rx/.

    b. Scroll down the page and locate the **Resources** tab.

    c. Click on the **Control Software Version** hyperlink to begin downloading the software.

2. Extract the files from the .zip file.

3. Double-click the setup.exe to run the installation wizard. Follow the directions on each screen to install the software.

    IMPORTANT: Note the folder/directory where the control software is being installed on the computer. This information will be necessary, later. The default installation directory is \Program Files (x86)\AT_HDVS_RX.

Connecting RS-232

1. Connect a serial cable from the **RS-232** port on the AT-HDVS-150-RX, to the RS-232 port on the display. The included 3-pin captive screw connector should be wired as shown. If a DE-9 port is not available on the computer, a DE-9 to USB cable may be used.
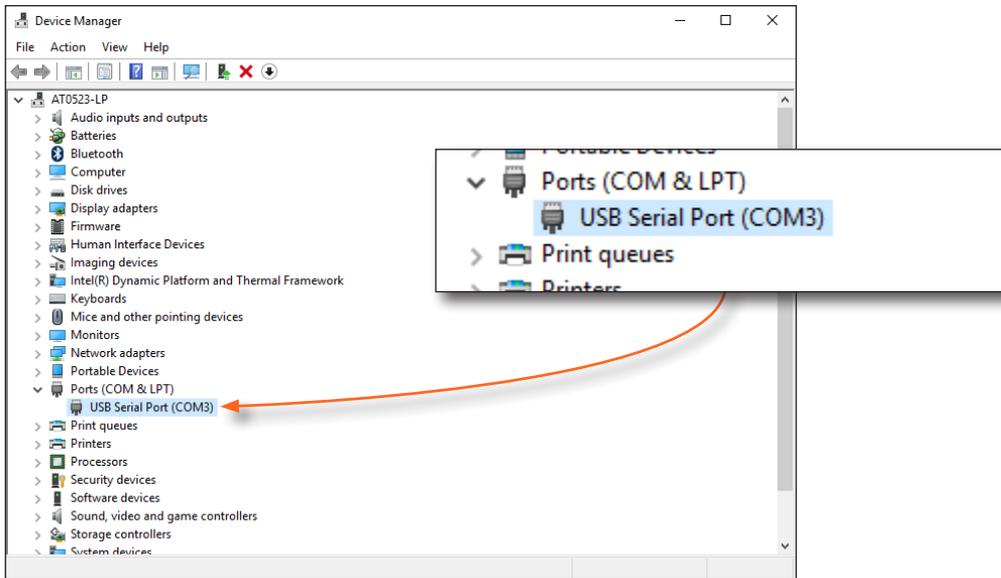
    NOTE: DE-9 to USB cables usually require a driver. Refer to any documentation that was provided with the cable to ensure correct functionality.
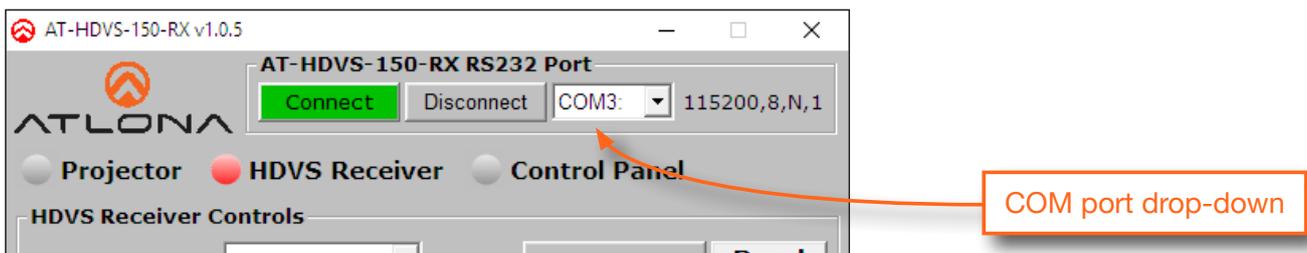

to display
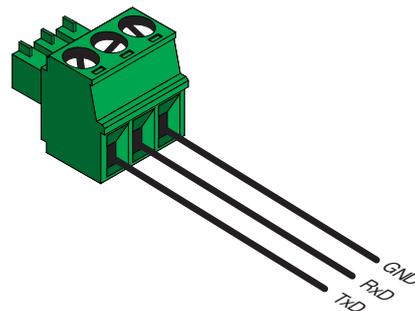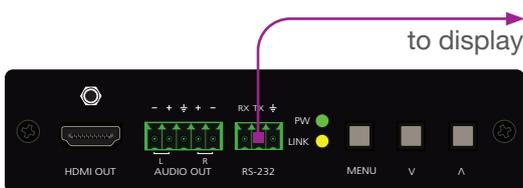
2. Go to the Windows Device Manager and verify the installed COM port, under Ports (COM & LPT).
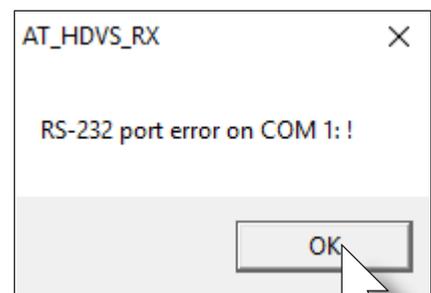

3. If running **Windows 10**, perform the step 3a. Otherwise, continue with step 4.

    a. Install the **gulim.ttc** font file by double-clicking it. This file <u>must</u> be installed, if running the software under Windows 10.

4. Open Windows Explorer and locate the folder/directory where the AT-HDVS-150-RX Control Software is installed. The default installation directory is \Program Files (x86)\AT_HDVS_RX.

5. Double-click the **AT_HDVS_150_RX_AP.exe** file to launch the control software and select the correct COM port from the COM port drop-down list.

COM port drop-down

If a message box, similar to the following, is displayed, then click the **OK** button and check the following:

- The incorrect COM port is selected in the control software. Select another COM port from the drop-down list, next to the Connect and Disconnect buttons.

- Windows was unable to install the COM port. Check the connection between the computer and the AT-HDVS-150-RX. In addition, verify that the captive screw terminal block is wired correctly to the DE-9 interface. After verifying the connection, check that the COM port is available under the Device Manager. If the problem persists, contact an Atlona Technical Support Engineer for assistance.

Programming the AT-HDVS-150-RX

Once the control software is running, it can be used to program the AT-HDVS-150-RX to affect the behavior of the connected display. For example, the display can automatically be turned on, when the source device is turned on. Conversely, when the source is turned off (or disconnected), then display is automatically turned off.

Controlling Display Power

1. Click the **Display Mode** drop-down list, in the control software.

2. Select the desired mode. In this example, **DispSW AVSW** is selected. This will instruct the display to "follow" the power-on / power-off state of the source device.

3. Refer to the table below, for a list of available settings and a brief description.

4. Refer to the AT-HDVS-150-RX User Manual for more information on other settings.
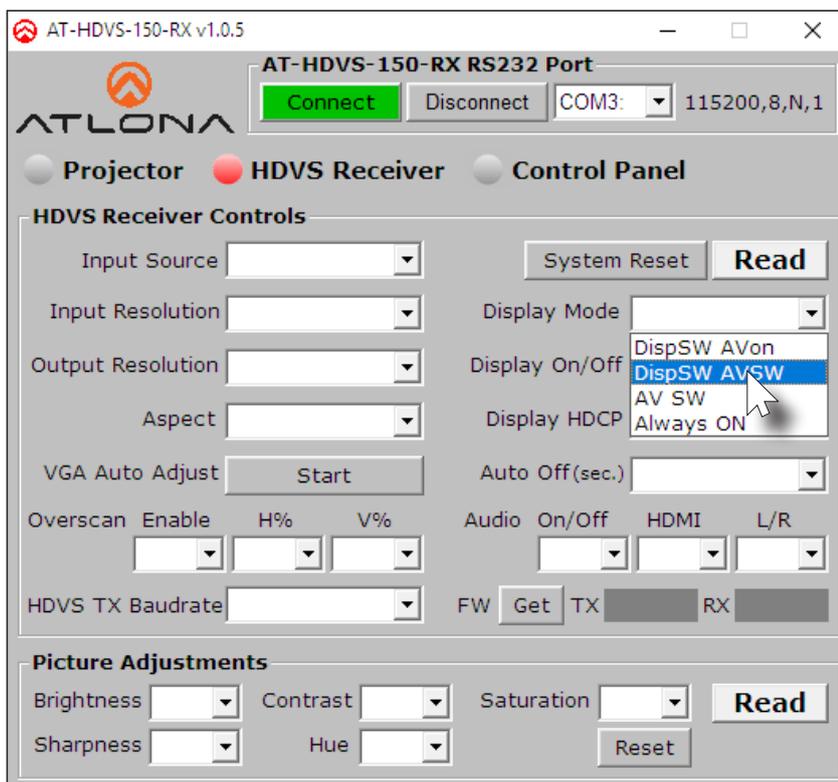
Setting	Description
DispSW AVon	Turns the display on or off; the source is unaffected.
DispSW AVSW	Display switches on/off, source audio/video signal switches on/off.
AV SW	Display is always on, source audio/video signal switches on/off
Always ON	Pressing the DISPLAY button will have no affect on the display or the source.

Projector Control

If a projector is being controlled by the AT-HDVS-150-RX, then click the **Projector** radio button in the top-portion of the screen, as shown below. This section of the control software is similar to the HDVS Receiver section.
In addition, this area also provides two fields for RS-232 "Display On" and "Display Off" commands.

1.   Click the **Projector** radio button in the top-portion of the screen.

2.   Click the Read button to fetch the RS-232 settings from the projector's RS-232 port. The **Baud Rate**, **Data Bit**, **Parity**, and **Stop Bit** fields will be filled in automatically.

> ℹ️ **NOTE:** If the RS-232 command cannot be read from the projector system, the **Baud Rate**, **Data Bit**, **Parity**, and **Stop Bit** fields will need to be entered manually. Click each of the drop-down lists to specify the required values.

3.   Once the projector's RS-232 settings are known, they can be saved to a local .ini file. Click the **Save** button to save the RS-232 settings to the desired file. It is recommended that the name of the file be descriptive of the projector manufacturer / model.   This way, if multiple projectors are used, the proper file can be loaded.

4.   Click on the **Text** or **Hex** radio button to specify the type of command string that will be sent to the projector. Refer to the projector's User Manual for a list of commands.

5.   Enter the command for the "display on" and "display off" in the **Display On** and **Display Off** fields, respectively.

An example of a power-on command, might be:

PWON   // text format
BEEF030600BAD20100006001000D   // hex format
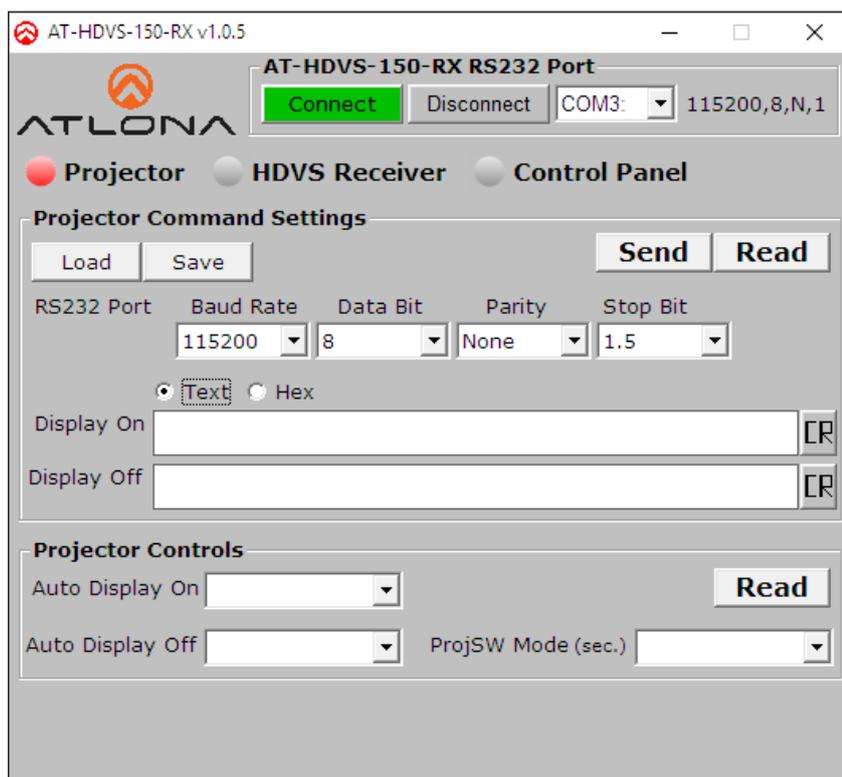
6. Once the proper command strings have been entered, refer to the tables below for information on setting the Auto Display On and Auto Display Off features.

    Auto Display On
    Click this drop-down list to select when the display will be powered-on, based on the detection of a source.

 | Setting | Description |
    | --- | --- |
    | On | Powers-on the display when a source is detected. |
    | Off | Display is not powered-on when a signal is detected. |

    Auto Display Off
    Click this drop-down list to select when the display will be powered-off, based on the detection of a source.

Setting	Description
On	Power-off the display when no signal is detected for the time interval specified in the **ProjSW Mode (sec.)** drop down list.
Off	Display is not powered-off when no signal is detected.

Connecting the AT-HDVS-150-RX to the Display

Once programming is completed, connect the RS-232 cable from the AT-HDVS-150-RX to the RS-232 port on the display or projector device, as shown in the illustration below. The display / projector will now function based on the programming which was performed in the control software. If a change to the display behavior is desired, then disconnect the RS-232 cable from the display, reconnect the RS-232 computer to the AT-HDVS-150-RX, launch the control software, and make the necessary changes.
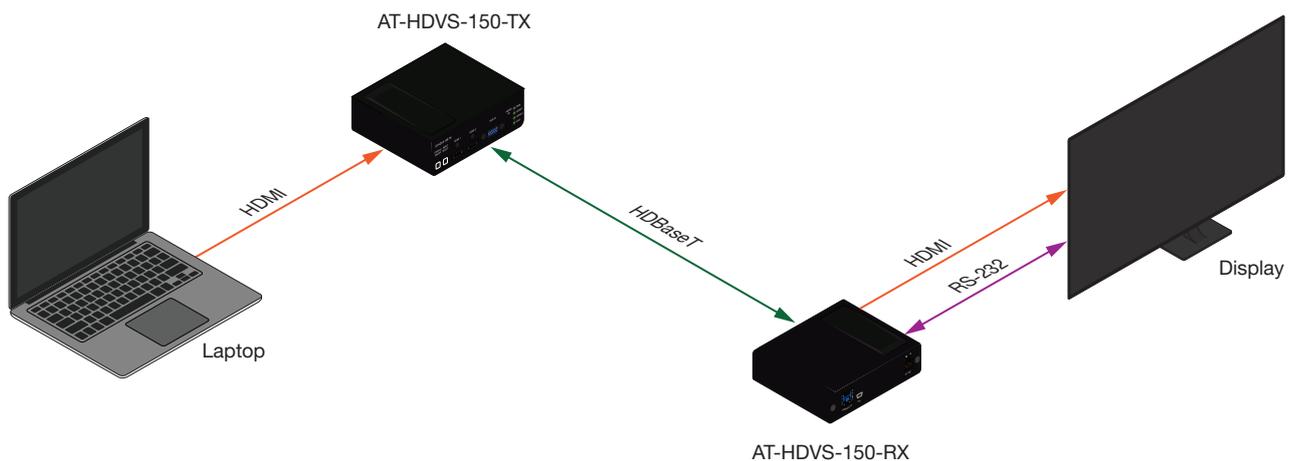
Appendix

Updating the Firmware

The following procedure is used for both the AT-HDVS-150-TX and the AT-HDVS-150-TX-PSK. The firmware file for the AT-HDVS-150-TX is used for both models.

Requirements

- AT-HDVS-150-TX or AT-HDVS-150-TX-PSK
- Firmware file: `AT-HDVS-150-TX_[version].bin`
- USB Type A to Mini-USB Type B cable
- Computer with USB port

1. Download the latest firmware from the Atlona web site.

2. Disconnect the power to the AT-HDVS-150-TX by disconnecting the Ethernet cable from the **HDBaseT OUT** port on the AT-HDVS-150-TX.

3. Press and hold the **DISPLAY ON/OFF** button.

4. While pressing the **DISPLAY ON/OFF** button, connect the USB cable from the computer to the **FW** port on the AT-HDVS-150-TX. When the USB cable is connected, the **PWR** LED indicator will glow solid green.
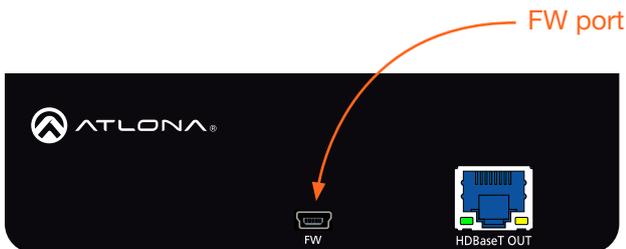
5. After a few seconds, a folder with the name USB UPDATER, will be displayed. Release the **DISPLAY ON/OFF** button.
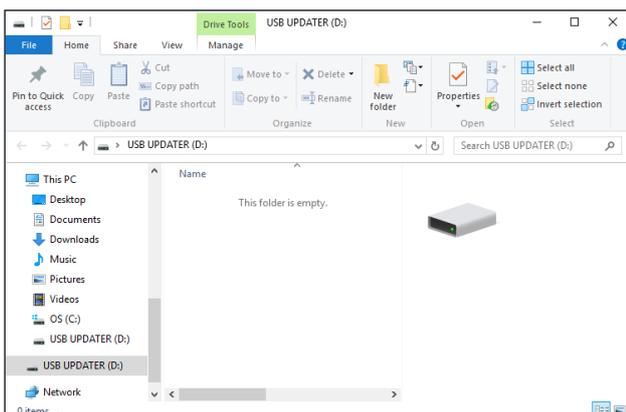
If the folder is not displayed, open Windows Explorer and locate the drive named USB UPDATER.
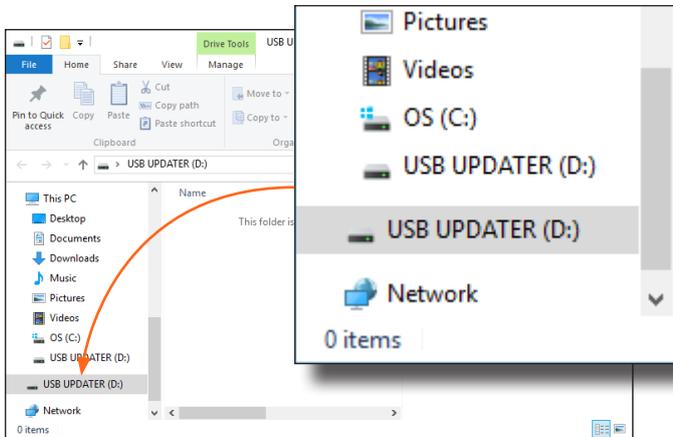
7.   Delete all files from the USB drive, if any are present.

8.   Drag-and-drop the `AT-HDVS-150-TX_[version].bin` firmware file to the drive.

9.   After the file has been copied, disconnect the USB cable from both the computer and the AT-HDVS-150-TX.

10.   Reconnect the Ethernet cable to the **HDBaseT OUT** port on the AT-HDVS-150-TX.

11. The update process is complete.

Specifications

Video	
HD/SD	4096x2160@24/25/30/50[1]/60Hz[1], 3840x2160@24/25/30/50[1]/60Hz[1] (UHD), 2048x1080p, 1080p@23.98/24/25/29.97/30/50/59.94/60Hz, 1080i@50/59.94/60Hz, 720p@50/59.94/60Hz, 576p, 576i, 480p, 480i
VESA	2560x2048, 2560x1600, 2048x1536, 1920x1200, 1680x1050, 1600x1200, 1600x900, 1440x900, 1400x1050, 1366x768, 1360x768, 1280x1024, 1280x800, 1280x768, 1152x864, 1024x768, 800x600, 640x480
Color Space	YUV, RGB
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0*
Color Depth	8-bit, 10-bit, 12-bit

Audio	
Analog In	PCM 2Ch
HDMI In / HDBaseT Out	PCM 2Ch
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz
Bit Rate	24-bit (max.)

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI	15	5	30	10
CAT-5e / CAT-6	115	35	197	60
CAT-6a / CAT-7	130	40	230	70

Signal	
Bandwidth	10.2 Gbps
HDCP	1.4

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

Power	AT-HDVS-150-TX	AT-HDVS-150-TX-PSK
Consumption	18.7 W (when paired)	18.7 W (when paired)
Idle Consumption	22	22 W
BTU/h	63.77 (normal) / 75.02 (idle)	63.77 (normal) / 75.02 (idle)
Supply	N/A	Input: 100 - 240 V AC, 50/60 Hz Output: 48 V DC, 3.125 A

Dimensions	Inches	Millimeters
H x W x D	1.50 x 5.00 x 4.02	38 x 127 x 102

Weight	Pounds	Kilograms
Device	5.16	2.34

Certification		
Unit	CE, FCC	

Compliance		
NDAA-889	Yes	
TAA	Yes	

Warranty		
3 years	View the full warranty information here: https://atlona.com/warranty	

Footnotes

(1) 4096x2160 @ 50/60 Hz and 3840x2160 @ 50/60 Hz supports 8-bit 4:2:0 choma subsampling, only.