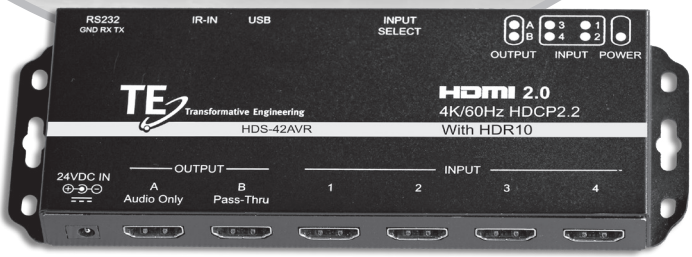
HDS-42AVR

HDMI Switcher

INSTALLATION MANUAL



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INTRODUCTION

Thank you for purchasing **Transformative Engineering's HDS-42AVR HDMI Switcher.** This product incorporates many advanced technologies to accomplish switching and distribution of (4) High Definition MultiMedia Interface (HDMI) Ultra High Definition ("4K") sources to two outputs. One output is a full-resolution and original format video presentation of your selected input. The second output is designed to present full audio formats of your selected input, but without video. In addition, this audio signal, carried over HDMI, is presented with High Definition Copyright Protection (HDCP) and HDMI versions that will allow connection to an older audio/video processor or receiver capable of handling HDMI v1.2 through v1.4 with HDCP 1.4.

The application design for this product is to allow multiple (up to four) HDMI 2.0 sources utilizing HDCP 2.2 to be fully enjoyed with a current UHD ("4K") display capable of handling HDCP 2.2, while transferring the audio only portion of the source to your Audio playback system, which is not capable of handling the HDCP 2.2 and HDMI 2.0 signals. Without this device, you would not be able to listen to the higher-level audio streams such as Dolby True HD and DTS-Master, which are only available from the HDMI signal path. In fact, attempting to connect any HDMI 2.0 signal (audio or video) into your older receiver/processor will yield no output to your display or speakers. Until now, the only solution would have been to replace your audio/video processor/receiver.

Proper connection and attention to limitations of this (or any other) product will result in secure, reliable and predictable results.

This HDMI Switcher will meet our rated specifications using HDMI High-Speed interconnect cables rated for Full UHD transmission at 18.2 Gbits. The first step in diagnosing problems with this product should center on the connection and choice of the interconnects used.

Please follow the instructions and diagrams shown in this Manual. Any questions should be directed to your Dealer, Distributor, or to our Technical Department. Our Contact information is:

Transformative Engineering

Transformative Engineering, Inc.
194 Vanderbilt Ave., Norwood, MA 02062-5000
Telephone: 781-769-6410 Fax: 781-255-0975
Email: info@transformativeengineering.com

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SAFETY INFORMATION

- Do not expose this device to water, moisture, or liquids. Possible electric shock may result as well as failure of the unit to operate.
- Do not modify or disassemble the enclosed Power Supply. Doing so will void the warranty and potentially expose the user to dangerous voltages resulting in electrical shock.
- Do not substitute or use any other Power Supply other than the enclosed unit, or a Transformative Engineering approved replacement part.
- Do not disassemble or modify the HDS-42AVR for any reason. There are no user serviceable parts inside. Doing so will void the manufacturer's warranty. Also, our case is an integral part of our design and is responsible for cooling and shielding. Any breach of this case will potentially cause malfunction and/or product failure.

KIT CONTENTS

HDS-42AVR Switcher

- (1) 24V, 1A Power Supply with outlet adapter for your region
- (1) Remote Control
- (1) Infra-Red Pickup Cable
- (1) Installation Manual

FEATURE SET

- (4) HDMI Inputs (Version HDMI 2.0, HDCP 2.2)
- (2) Outputs - HDMI – Pass-Through Video and Audio Only
- Output A presents all Audio formats possible with selected input with Muted Video
- Output B presents all Video formats possible with selected input with audio options (see page 05)
- Full remote control via IR (Remote Included) or RS232
- Powered by one 24V Power Supply (Provided)
- Diagnostic Indicator Lights for monitoring performance and operation
- USB Port for Firmware updates

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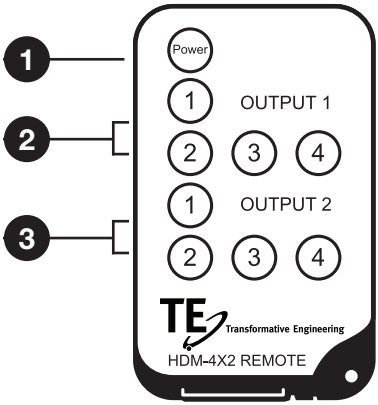
HDS-42AVR – REMOTE CONTROL/OPERATION



Please Note: The supplied remote is provided for programming use only. It is not intended for normal operation of this device. The remote is a general remote with extra IR commands designated for other **Transformative Engineering** products

1. **POWER** – This button has no function. The HDS-42AVR should remain ON at all times.

2. **SOURCE SELECT** (Blue 1-4) Use to select the desired input.

3. **AUDIO SELECT** (Yellow 1-4) – Only Yellow Buttons 1 & 2 are Active. With your Audio/Video Receiver OFF, pressing "1" will allow 2-channel audio to pass to the TV over the HDMI plugged into OUTPUT B. Pressing the "2" will mute the audio to the TV.

Additionally, turning OFF your Audio Video Receiver should automatically transfer 2-CH Audio to your TV over the HDMI cable. Returning Power to your Audio-Video Receiver should MUTE the TV's sound.

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SPECIFICATIONS

Input Signals:

HDMI Version 1.0 thru 2.0b
IR Signal – Pickup for operation of this device only
5v 38Khz IR sensor
RS232 – 3-Pin (see Page 11)

Video Formats Supported:

480p/576i/480p/576p/720p/1080i/1080p
UHD up to 18.2 Gbps: 4K 60 Hz 4:4:4(8bit), 4:2:2(8,10,12bit), 4:2:0(8,10bit) all current versions of HDR included

Audio Formats Supported:

All HDMI supported formats, including DTS-HD, Dolby-HD, DVD-A, Dolby TrueHD, 8-CH LPCM, DTS-X, DTS-Master

Output Signal:

Output B: HDMI Version 1.0 thru 2.0b
Output A: Audio Only, Muted Video at 720p

Power Supply (supplied):

24 VDC, 750ma

Dimensions (Switcher): 7.0" W x 1.25" H x 4.0" D

Weight: 1.50 Lbs (Switcher)

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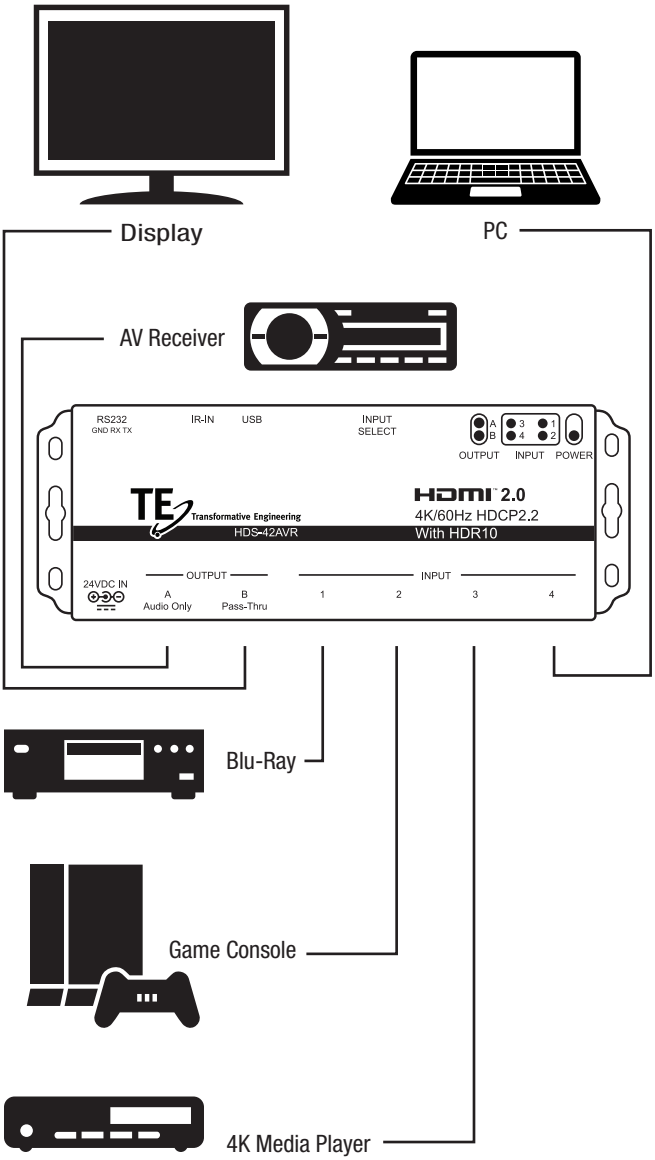
System Installation



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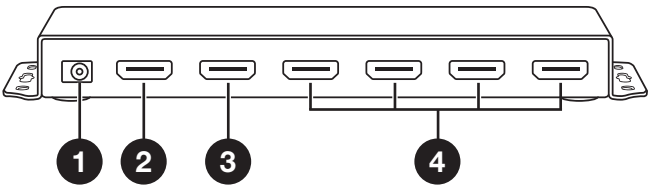
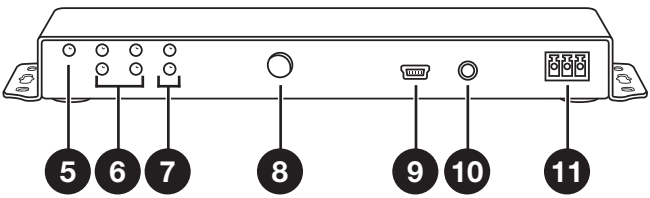
SWITCHER CONNECTIONS





1. Power IN
2. Output A
3. Output B
4. HDMI Inputs 1-4
5. Power Light
6. Input Indicator Lights
7. Output Indicator Lights
8. Input Select Switch
9. Firmware Update Port
10. IR Pickup Port
11. RS232 Connector

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SWITCHER FUNCTIONS – See Page 8

1. **Power In** – This receptacle accepts the supplied 24V DC Power adapter. Do not substitute any other device or possible damage or operational defects may occur.

2. **Out-A** – This HDMI connection is designed for connection to your Audio Receiver or Surround Processor. It carries the audio signal ONLY from your selected Input. There is NO VIDEO on this output.

3. **Out-B** – Connect to your Display for selection of Inputs 1-4. This is a standard HDMI v2.0b connector and will be limited to cable length similar to any other HDMI source. For transmission of UHD ("4K") signals, you must use a High Speed HDMI Cable capable of 18.2 Gbps thru-rate for Full 4K Video.

4. **HDMI In 1-4** – These four HDMI input jacks are standard HDMI v2.0b compatible and will pass all video and audio signals thru to the respective outputs.

5. **Power Light** – Illuminates when Power is active to this device.

6. **Input Lights** – Illuminate when the selected Input is active.

7. **Output Lights** – Illuminate when the Output(s) are actively being used.

8. **Input Selector** – Toggles through the Four Inputs. Indicators (#6) show response.

9. **USB** – For Firmware updates (provided if necessary) by Transformative Engineering. DO NOT attempt to connect this port for any other reason. Loss of all operation may result.

10. **IR Sensor** – Receiver for remote control signals to control the Switcher. THE SUPPLIED IR PICKUP IS THE ONLY DEVICE THAT WILL INTERFACE WITH THIS SWITCHER. The remote controller is included in the accessory kit and is the controller recommended. Alternatively, RS232 commands or IR codes programmed into a Control System may be utilized. See Appendix A for the proper protocols.

11. **RS232** – Control command connection for this switcher. Please refer to Appendix A for the command protocols. Three conductors are required.

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TROUBLESHOOTING & WARRANTY

TROUBLESHOOTING

As mentioned previously, most malfunctions can be addressed by careful examination of the HDMI cables and suitability of the cables for the application intended. High quality, high-bandwidth HDMI cables, certified for full UHD transmission are critical. If this has been examined with no resolution of your problem, please contact our Technical Support Department at 781-769-6410 or via email at: info@transformativeengineering.com.

WARRANTY

Transformative Engineering, Inc. guarantees this product for Three Years from your original purchase. We guarantee performance and operation to published specifications including all parts and labor. We do not warranty against mis-use or abuse. To obtain warranty service, please contact our Technical Support Department at **781-769-6410** or via email at: **info@transformativeengineering.com.**

Apendix 1: IR Codes

Remote Code Mapping		HDMI-42AVR
Vendor Code	01FE	
Function	Code	Description
Power	This button has no function. The HDS-42AVR should remain ON at all times.	
Output 1:		
1	0C	Output 1 to Input 1
2	04	Output 1 to Input 2
3	08	Output 1 to Input 3
4	07	Output 1 to Input 4
Output 2:		
1	1F	Output 1 to Input 1
2	1E	Output 1 to Input 2
3	NA	NA
4	NA	NA

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Apendix 2: RS-232 Control

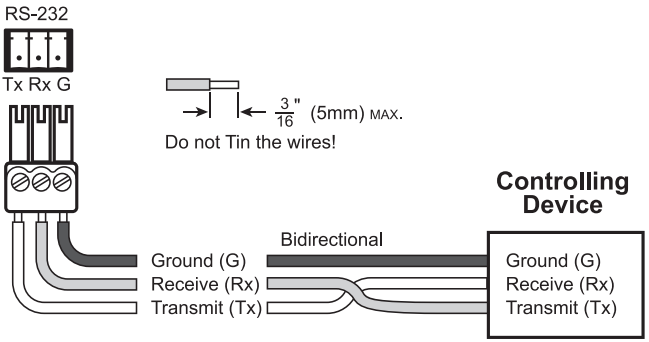
Baud rate 57600
Data Bits. 8
Stop bits. 1

Parity . . . . . None
Append. . . . . <CR><LF>

Control Function	Command	Response	Description
Select Input 1	swc 1 1	Select Rx Port = 1	Switches to Input 1
Select Input 2	swc 2 1	Select Rx Port = 2	Switches to Input 2
Select Input 3	swc 3 1	Select Rx Port = 3	Switches to Input 3
Select Input 4	swc 4 1	Select Rx Port = 4	Switches to Input 4
Request current source	sws ?	Select Rx Port = 1	Reports Current Source
		Select Rx Port = 2	
		Select Rx Port = 3	
		Select Rx Port = 4	

Figure 1: RS-232 Wiring

Control Processor Connections



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