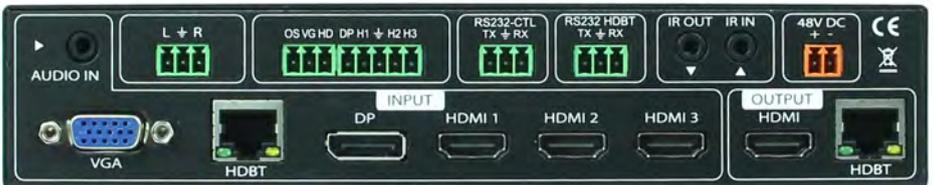


User Manual

AC-SW62-UHD

6x2 Classroom/Conference Room Multi-format Matrix w/ HDBaseT Input and Output



AVProConnect
3518 N Casco Avenue ~ Sioux Falls, SD 57104
1-877-886-5112 ~ 605-274-6055
support@avproconnect.com

Introduction

AVProConnect's AC-SW62-UHD (aka EasyStreet) is a robust multi-format matrix switch designed for small offices, classrooms and conference rooms. This 6x2 matrix is designed to be an ALL-IN-ONE solution for the active office allowing for multiple input types, including HDMI (x3), VGA, DisplayPort. In addition to the local inputs, it has a HDBaseT input that is compatible with the AC-EX100WPP-UHD so you can use a Wall Plate Transmitter from anywhere in the room, or a separate room all together!

Key benefits of using AC-SW62-UHD:

1) **ULTRA HIGH DEFINITION:** This unit supports 4K resolutions for today's modern office. As displays get larger and PC's output more 4K content, 4K is ever more necessary in this environment. Utilizing high resolution allows the user to share higher quality marketing and draft images and makes presentations sharper and view-able for larger audiences.

2) **DISTANCE:** By using AC-EX100WPP-UHD-T, the transmission distance for HD 1080P is 100 meters (330ft) & 4K is up to 70 meters (230ft) into the matrix! You can additionally go 70M (230ft) on 1080P, 40M (131ft) on 4K from the HDBaseT output to a display.

3) **AUTO SENSING:** This matrix is designed to be a "Set it & forget it" piece of hardware. When the user plugs in their device (BYOD), the matrix automatically senses the signal and makes it active. If more than one inputs are in use, there is a simple button on the front to toggle inputs for each output.

4) **CONTROL:** Simple front panel control, IR and RS232 control is available.

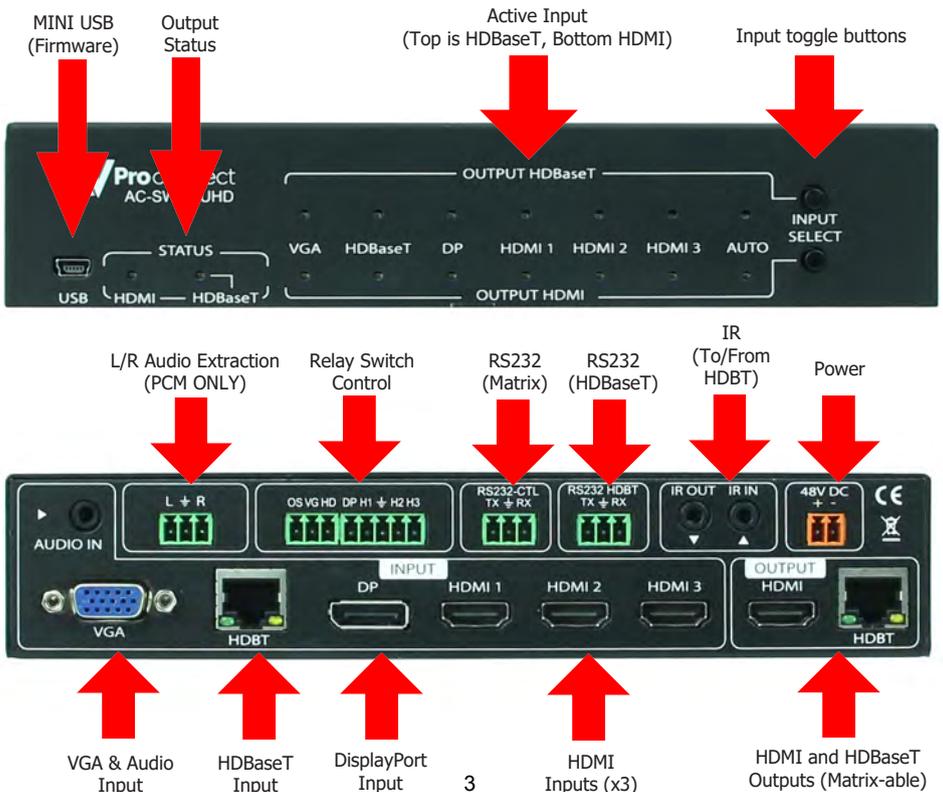
5) **POWER:** The EasyStreet is capable of powering both the HDBaseT input device or transmitter (AC-EX100WPP-UHD or AC-EX100-UHD-T) as well as the HDBaseT receiver (AC-EX70-UHD-R). This eliminates unnecessary power supplies and cleans up the installation dramatically.

6) **MULTI-FORMAT:** The Multi-format design allows you to leave this "in-room" matrix comfortable without having to supply a plethora of adapters. You have input options for VGA, DisplayPort, and 3x HDMI. In addition if you use the AC-EX100-WPP Transmitter, you have another HDMI and VGA input.

Applications:

- The efficient user interface makes it an ideal "leave in room" device for conference rooms that the end user can control simply.
- Conference/huddle room configurations where many sources types can be used, DisplayPort, HDMI and VGA
- HDBaseT In and Out for large auditorium type scenarios.
- Lecture halls and instructor led classrooms where the instructor can have total control of remote and local inputs
- Auto sensing, so the end user has ZERO configuration
- In-Home media rooms with one or two displays and a need for multiple, fast switching , inputs
- Anywhere where a reliable, simple to use switch is necessary.

Ports, Indicators & Basic Functions:



6x2 Classroom/Conference Room Multi-format Matrix w/ HDBaseT Input and Output

■ Features

- 3x HDMI 2.0 Inputs
- DisplayPort & VGA Inputs
- HDBaseT Input (w/ PoE for Wall Plate Transmitter)
- HDMI & HDBaseT Matrix Outputs
- 4K 30 4:4:4, 4K60 4:2:0 (HDMI input Only)
- HDR 4:2:2 12 Bit Support (HDMI input Only)
- DCI 2K, 1080P, 1920x1080x60 (VGA Support)
- 4K 30 4:4:4, 4K60 4:2:0 (DisplayPort)
- HDCP 2.2 & Earlier Supported
- 100M (330ft) On 1080P, Up to 70m (230ft) on 4K (Cat6a) In
- 70M (230ft) On 1080P, 40M (131ft) on 4K (Cat6a) Out
- PoE provider for AC-EX100WPP-UHD-T Wall Plate Tx
- PoE Provider for AV-EX70-UHD-R Receiver
- Fast Switching
- Plug & Play auto input sensing
- Simple "One-touch" front panel controls
- Analog audio extraction
- RS232 & IR Control
- RS232 & IR pass through to HDBaseT Rx
- Compatible with HDBaseT displays, projectors, AVR's
- Designed for the conference/classroom room so your customer can focus on their meetings, not their video system.
- Supports uncompressed PCM 2- Ch., 5.1, 7.1, Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio, Atmos.

■ What's Included

- AC-SW62-UHD (Matrix)
- IR Emitter
- IR Receiver
- Mounting Ears
- 4 ~ 3-pin terminal plugs
- 1 ~ 5-pin terminal plug
- 48v Power Supply
- Operating Instructions

Notice

AVProConnect reserves all the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

Warning

To reduce the risk of fire, electric shock or product damage:

- | | |
|--|--|
| <p>E  1. Do not expose this device to rain, moisture, dripping or splashing and ensure that no objects filled with liquids are placed on or near the devices.</p> |  6. Clean this device with a dry cloth only. |
|  2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated. |  7. Unplug this device during lightning storms or when unused for long periods of time. |
|  3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items. |  8. Protect the power cord from being walked on or pinched particularly at plugs. |
|  4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. |  9. Only use attachments / accessories specified by the manufacturer. |
|  5. Do not place sources of naked flames, such as lighted candles, on the unit. |  10. Refer all servicing to qualified service personnel. |

■ Specifications

HDMI IN	
Video Resolutions	Up to 4K60 4:2:0 & 4K30 4:4:4
VESA Resolutions	Up to 2560x2048 (QSXGA)
HDR Resolutions	4K24 4:2:2 12 bit, 4K24 4:2:0 10 bit
VGA IN	
Video Resolutions	Up to DCI 2K, 1080P 60, 1900x1080x60
DisplayPort In	
Video Resolutions	Up to 4K60 4:2:0 & 4K30 4:4:4
VESA Resolutions	Up to 2560x2048 (QSXGA)
Color Space	YUV, RGB (CSC: Rec. 601, Rec. 709, BT2020, DCI, P3 D6500)
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0 Supported
Deep Color	Up to 12 bit w/ 4K
Audio Formats Supported (2CH Extraction Port)	2CH PCM
Audio Formats Supported (HDMI)	PCM 2.0 Ch, LPCM 5.1 & 7.1, Dolby Digital, DTS 5.1, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos
HDBaseT Input	
Distance 1080P (Input)	100M (330 Feet) (With CAT6a/7)
Distance 4K & HDR (Input)	70M (230 Feet) (With CAT6a/7)
HDBaseT Output	
Distance 1080P (Output)	70M (230 Feet) (With CAT6a/7)
Distance 4K & HDR (Input)	40M (131 Feet) (With CAT6a/7)
Bandwidth	10.2 Gbps
CEC	Yes
HDCP	HDCP 2.2 and Earlier
Operating Temperature	23 to 125°F (-5 to 51°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)
Humidity Range	5-90% RH (No Condensation)
Power Consumption (Max)	20 Watts
Power Supply	Input: AC 100-240V ~ 50/60Hz Output: DC 48 1.5A
Dimensions (Unit Only)	mm: 41 x 171 x 206
Height/Depth/Width)	inch: 1.63 x 6.75 x 8.13
Weight (Unit)	1.5 lbs/.68kg
Weight (Packaged)	3 lbs/1.36kg
*Specifications subject to change without notice. Mass & dimensions are approximate	

Basic Installation:

The unit has an Auto-Config on boot up and reception of new sources and displays to maximize plug and play installation:

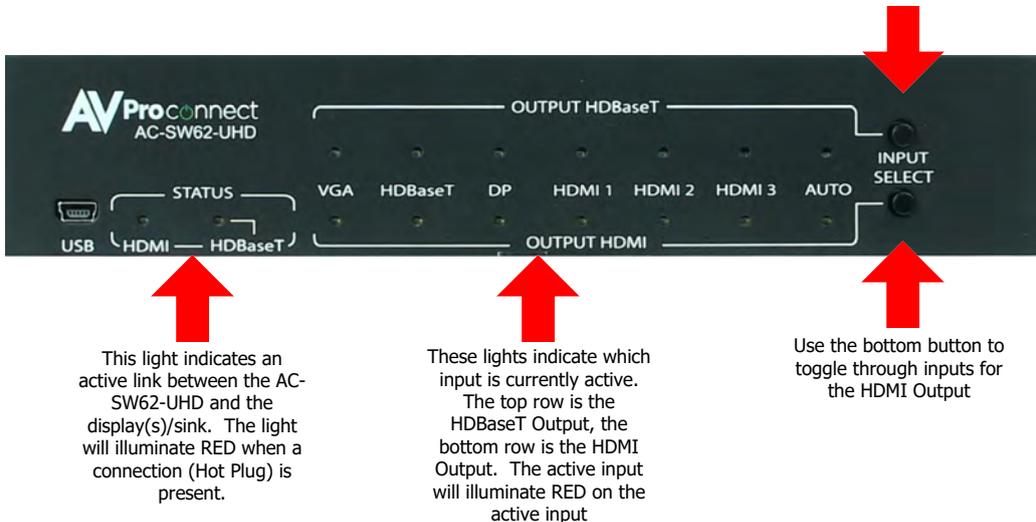
1. Plug in the display(s) or sink devices
2. Plug in the sources
3. Plug in the power supply to the AC-SW62-UHD
4. Power on the Sources and Display(s)

This will ensure proper EDID application across the device.

Basic Control Using Front Panel:

The unit is designed to be left in a room if needed so a end user can easily change sources as pictured below:

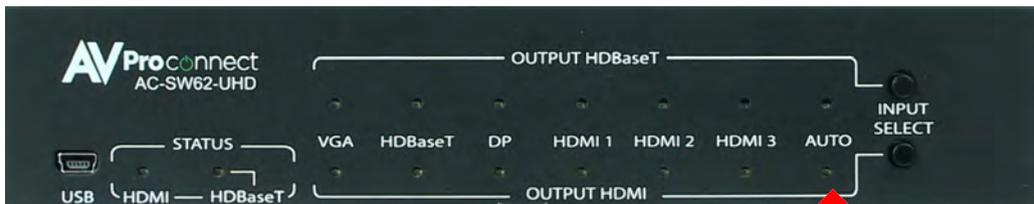
Note on "Auto": When "Auto" is selected the device goes into Automatic Switching Mode -See the next page for details



■ Auto-Switching Logic

When the AC-SW62-UHD is in "Auto" mode the logic is to switch to the most recently plugged in device based on a Hot Plug Event. You can have either the HDMI, HDBaseT or both be set to "Auto" mode. See examples:

1. When a new source device (like a PC) is plugged into the AC-SW62-UHD automatically switches to that input.
2. When an active source device is disconnected, the AC-SW62-UHD is automatically switched back to the last source plugged in before it (so long as it is still active). It will continue to backtrack until it finds an active source. If no active source is found it will stop searching after one cycle.
3. You can use the HDBaseT Input with worrying about the auto sensing. It will work exactly as described. Meaning, a source device needs to be plugged into the HDBaseT Transmitter for the AC-SW62-UHD to automatically switch to it. It WILL NOT switch to it just because the HDBaseT link it active.



Make sure this light is selected for Auto-Switching to be enabled. You can have it active on only HDBaseT, Only HDMI or BOTH.

■ PoE & HDBaseT (In/Out)

The AC-SW62-UHD has a HDBaseT Input and an HDBaseT Output. The distance for HDBaseT is 70M (230ft) using UTP/STP Cat cable. PoE works as described below.

HDBaseT Input:

- By default the PoE on the HDBaseT Input is set to OFF. This allows the device to be compatible with any HDBaseT Transmitter of ANY brand as long as the Transmitter can be powered.
- You can enable ieee PoE to be sent upstream to a HDBaseT Transmitter that can be powered this way. This is an ideal feature when using the AC-EX100WPP-UHD HDMI and VGA auto switching HDBaseT Transmitter.
- You can enable PoE buy simply pressing and holding the "HDMI" button on the front panel for 5 seconds or sending a RS232 command (on command list pg.11) - All LEDs flash indicating success.



Press and hold this button for 5 seconds to toggle PoE for the HDBaseT **INPUT**. All LEDs will flash if successful.

HDBaseT Output:

- The HDBaseT Output is designed to power the AC-EX70-UHD-R HDBaseT Receiver (Recommended).
- You can use ANY HDBaseT receiver, but we recommend using ones that can be powered as power standards vary.

• RS-232 Configuration

The AC-SW62-UHD Has two distinct RS232 Ports:

1. **HDBT** - This is for transmitting RS232 signals from the matrix to the remote HDBaseT Receiver.



2. **RS232-CTL** - This is for send signals to the AC-SW62-UHD for controlling the device - The Command List can be found on the next page. For convenience there is a notepad version of the Command List on www.avproconnect.com.



■ RS-232 Commands

```

-----
==                                     Systems HELP                                     ==
-----
==          System Address = 00          F/W Version : 1.20          ==
==                                     ==
== Azz : All Commands start by Prefix System Address zz, if [01~99] ==
-----
== System Control Setup Commands: ==
== H : Help ==
== STA : Show Global System Status ==
== SET RST : Reset to Factory Defaults ==
== SET ADDR xx : Set System Address to xx {xx=[00~99](00=Single)} ==
== SET CAS EN/DIS : Set Cascade Mode Enable/Disable ==
== GET ADDR : Get System Address ==
== GET CAS : Get Cascade Mode Status ==
== GET STA : Get System System Status ==
-----
== Rx POE control : ==
== SET RX POE x : Set Rx Poe Mode {x=0(Auto),x=1(ENABLE)} ==
== GET RX POE : Get Rx Poe Mode ==
-----
== Output Setup Command : (Note:output number 1=HDMI,2=HDBT) ==
== SET OUTx VS Inly : Set Output x To Input y {x=[0~2](0=ALL), y=[1~6]} ==
== SET OUT EXA EN/DIS : Set Ex-Audio Output Enable/Disable ==
== GET OUTx VS : Get Output x Video Route{x=[0~2](0=ALL)} ==
== GET OUT EXA : Get Ex-Audio Output Enable/Disable Status ==
== GET OUTx EDID DATA : Get Output x EDID DATA {x=[1~2]} ==
-----
== Input Setup Command: (Note:input number 1=VGA,2=HDBT,3=DP,4=HDMI1,5=HDMI2,6=HDMI3) ==
== SET INx EDID y : Set Input x EDID{x=[2~6], y=[0~26]} ==
== ==
== 0:1080P_2CH(PCM) 1:1080P_6CH 2:1080P_8CH ==
== 3:1080P_3D_2CH(PCM) 4:1080P_3D_6CH 5:1080P_3D_8CH ==
== 6:4K30Hz_3D_2CH(PCM) 7:4K30Hz_3D_6CH 8:4K30Hz_3D_8CH ==
== 9:4K60Hz(Y420)_3D_2CH(PCM) 10:4K60Hz(Y420)_3D_6CH 11:4K60Hz(Y420)_3D_8CH ==
== 12:1080P_2CH(PCM)_HDR 13:1080P_6CH_HDR 14:1080P_8CH_HDR ==
== 15:1080P_3D_2CH(PCM)_HDR 16:1080P_3D_6CH_HDR 17:1080P_3D_8CH_HDR ==
== 18:4K30Hz_3D_2CH(PCM)_HDR 19:4K30Hz_3D_6CH_HDR 20:4K30Hz_3D_8CH_HDR ==
== 21:4K60Hz(Y420)_3D_2CH(PCM)_HDR 22:4K60Hz(Y420)_3D_6CH_HDR 23:4K60Hz(Y420)_3D_8CH_HDR ==
== 24:USER1_EDID 25:USER2_EDID 26:USER3_EDID ==
== SET IN1 EDID y : Set VGA EDID {y=[0~3]} ==
== 0:X-2--VGA1080P 1:USER1_EDID 2:USER2_EDID 3:USER3_EDID ==
== SET INx EDID CY OUTy : Copy Output y EDID To Input x(USER1 BUF) ==
== {x=[1~6], y=[1~2]} ==
== SET INx EDID Uy DATAz : Write EDID To User y Buffer of Input x ==
== {x=[1~6], y=[1~3],z=[EDID Data]} ==
== GET INx EDID : Get Input x EDID Index ==
== {x=[0~6](0=All)} ==
== GET IN1 EDID y DATA : Get Input 1 EDID y Data ==
== {y=[0~3]} ==
== GET INX EDID y DATA : Get VGA EDID y Data ==
== {x=[2~6],y=[0~26]} ==
-----
== IR Code Setup: ==
== SET IR SYS xx yy : Set IR System Code ==
== {xx=[00~FF],yy=[00~FF]} ==
== SET IR OUTx Inly CODE zz : Set IR Data Code ==
== {x=[1~2],y=[1~6],zz=[00~FF]} ==
== GET IR SYS : Get IR System Code ==
== GET IR OUTx Inly CODE : Get IR Data Code ==
== {x=[0~2](0=All),y=[1~6]} ==
-----

```

■ IR Configuration

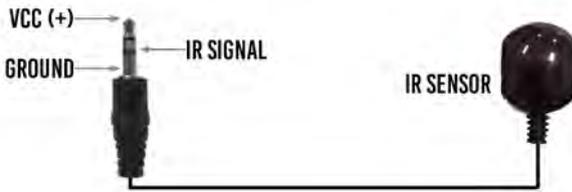


IR IN - The IR IN port is designed for a IR Receiving Eye (pictured below). This port has two main functions:

1. To receive IR signals to control the AC-SW62-UHD
2. To receive IR signals and pass them to the IR Emitter connected to an HDBaseT Receiver.

*Note on using control systems: This unit was not designed to accept control signals directly using a mono cable from control systems. Please use as shown in the image below.

IR Sensor:



IR Connect to Control System:

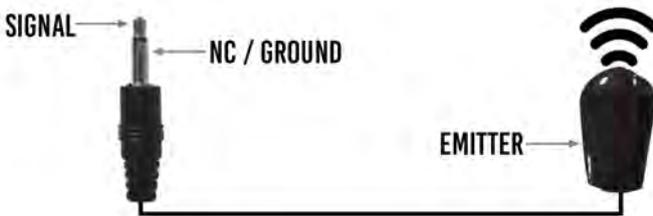


■ IR Configuration Cont.



IR OUT - The IR OUT port is send IR signals out of an IR Emitter (Pictured below) that originate at the HDBaseT Receiver OR HDBaseT Transmitter

IR Emitter:



■ Using The Relay Panel



The Relay Control Panel is for simple use with simple low voltage momentary switch panels. These come in many forms; Buttons, Electronic Switch Panels and wall plates. The Relay Control Panel is for selecting the active input.

How it works:

- To trigger the AC-SW62-UHD to switch to the desired input, you must complete a circuit from the terminal for the "Input" and "Ground". ex, If you close a circuit from the "VG" terminal and the "Ground" terminal. VGA will become the active input.
- By default, both outputs will switch together. You can use the "OS" to toggle 3 modes (Both, HDMI, HDBaseT). For more on the "OS" function see the next page.
- There are many readily available Low Voltage Switch Plates (We have some recommendations listed on next page)

Labels:

OS - Output Select (Toggles HDMI, HDBT, and Both. The last setting is remembered.)

VG - VGA Input Select

H1 - HDMI 1 Input Select

HD - HDBaseT Input Select

H2 - HDMI 2 Input Select

DP - DisplayPort Input Select

H3 - HDMI 3 Input Select

■ Using The Relay Panel cont.

Using the "OS" Output Select Function:

- Rear panel I/Os can be used to change source for local HDMI output port or HDBT port.
- Default is to change the source both HDMI and HDBT at the same time.
- Pressing the button which is connected to 'OS' will change the operation mode to only switch the source for local HDMI output or only for HDBT output port.
- When all LEDs on top row flash one time after pressing the button 'OS', that means press rear panel I/O button will only change the source for HDBT port.
- If all LEDs on the bottom row flash one time after pressing the button 'OS', that means press rear panel I/O bottom will only change the source for local HDMI output port.
- If all LEDs flash on both rows then it is back to switching both at the same time
- The switching mode changed by button 'OS' will be remembered.

Recommended "ready-made" wallplates:

We recommend Kyle (www.kyleswitchplates.com/touch-plate-low-voltage-lighting/)

Kyle has a great selection and can custom engrave buttons for \$7 per button and have quick turn around.

Kyle Models that work:

Touch-Plate Classic

Touch-Plate Mystique (Engravable)

Touch-Plate Ultra (Engravable)

Other Brands/Models:

Legrand - LVSW-108

WattStopper - WATT-LMSW-108

Leviton - LVS-8W

■ Audio Extraction

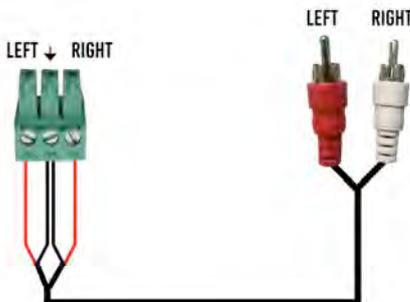
Stereo audio extraction is available from the AC-SW62-UHD. Audio extraction supports 2CH PCM audio only and is ideal for audio from conferencing device like PC's, MACs, etc...

How it works:

- Audio from this port is ON by default, so just plugging in a cable will start pulling the audio.
- Be sure the sources are not set to bit-stream (Dolby, DTS, etc..) audio. The EDID should prevent this, but if you hear no audio, this is likely the cause.
- The extracted audio switched with the HDBaseT Output.



■ Stereo Cable Preparation (2 RCA's)



NOTE: Pre-made audio cable can be purchased from www.avprostore.com. The part number is: AC-CABLE-3PIN-2CH

■ Advanced EDID Management

EDID Management can be done by RS232 and also from the front panel controls.

From RS232:

- Send EDID commands here (notepad command list available on www.avproconnect.com):

```

== Input Setup Command: (Note:input number 1=VGA,2=HDBT,3=DP,4=HDMI1,5=HDMI2,6=HDMI3) ==
== SET INx EDID y      : Set Input x EDID{x=[2~6], y=[0~26]} ==
==                                                              ==
== 0:1080P_2CH(PCM)    1:1080P_6CH          2:1080P_8CH          ==
== 3:1080P_3D_2CH(PCM) 4:1080P_3D_6CH          5:1080P_3D_8CH          ==
== 6:4K30Hz_3D_2CH(PCM) 7:4K30Hz_3D_6CH          8:4K30Hz_3D_8CH          ==
== 9:4K60Hz(Y420)_3D_2CH(PCM) 10:4K60Hz(Y420)_3D_6CH 11:4K60Hz(Y420)_3D_8CH ==
== 12:1080P_2CH(PCM)_HDR 13:1080P_6CH_HDR          14:1080P_8CH_HDR          ==
== 15:1080P_3D_2CH(PCM)_HDR 16:1080P_3D_6CH_HDR       17:1080P_3D_8CH_HDR       ==
== 18:4K30Hz_3D_2CH(PCM)_HDR 19:4K30Hz_3D_6CH_HDR      20:4K30Hz_3D_8CH_HDR      ==
== 21:4K60Hz(Y420)_3D_2CH(PCM)_HDR 22:4K60Hz(Y420)_3D_6CH_HDR 23:4K60Hz(Y420)_3D_8CH_HDR ==
== 24:USER1_EDID        25:USER2_EDID          26:USER3_EDID          ==
== SET IN1 EDID y      : Set VGA EDID {y=[0~3]} ==
== ==0:X-2--VGA1080P    1:USER1_EDID          2:USER2_EDID          3:USER3_EDID ==
== SET INx EDID CY OUTy : Copy Output y EDID To Input x(USER1 BUF) ==
== {x=[1~6], y=[1~2]} ==
== SET INx EDID Uy DATAz: Write EDID To User y Buffer of Input x ==
== {x=[1~6], y=[1~3], z=[EDID Data]} ==
== GET INx EDID          : Get Input x EDID Index ==
== {x=[0~6](0=All)} ==
== GET IN1 EDID y DATA  : Get Input 1 EDID y Data ==
== {y=[0~3]} ==
== GET INx EDID y DATA  : Get VGA EDID y Data ==
== {x=[2~6],y=[0~26]} ==
==-----

```

From Front Panel:

- Press and hold the **HDBaseT Input Select** Button for 5 seconds (All LEDs will flash indicating it is in EDID setup mode)
- Now quick press the **HDBaseT Input Select** port to toggle through the inputs, stop when the LED illuminates the INPUT you want to set the EDID for.
- Now the quick press the **HDMI Input Select** to toggle the EDIDs (See list below for the lighting configuration and corresponding EDID)
- Once on the desired EDID press and hold the **HDMI Input Select** Button for 5 seconds to set the EDID
- **NOTE:** This will time out and go back to normal operation if no button is pressed for 5 seconds.

■ **Advanced EDID Management - EDID Table**

■ Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

Damage Requiring Service: The unit should be serviced by qualified service personnel if:

- The DC power supply cord or AC adaptor has been damaged;
- Objects or liquids have gotten into the unit;
- The unit has been exposed to rain;
- The unit does not operate normally or exhibits a marked change in performance;
- The unit has been dropped or the housing damaged.

● Warranty

If your product does not work properly because of a defect in materials or workmanship, AVProConnect (referred to as “the warrantor”) will, for the length of the period indicated as below, **(Parts/Labor (10) Years)** which starts with the date of original purchase (“Limited Warranty period”), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the “Labor” Limited Warranty period there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

● Warranty Limits and Exclusions

- 1) **This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage.** The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service Center or other Authorized Service, or damage that is attributable to acts of God.
- 2) **There are no express warranties except as listed under “limited warranty coverage”.** The warrantor is not liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service location, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)
- 3) **Parts and service, which are not covered by this limited warranty, are on user responsibility.**



Address:

3518 N Casco Ave , Sioux Falls, SD 57104

Tel: 877-886-5112 605-274-6055

■ **Notes:**

Thank you for choosing AVProConnect!

Please contact us with any questions, we are happily at your service!



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