

## User Manual

# AC-AVDM-AUHD

18 Gbps (4K60 4:4:4, and HDR)  
Audio Down-mixer, with video  
downscaling. Dolby Digital and DTS  
Support



**AVProEdge**

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The AC-AVDM-AUHD is an audio down-mixer supporting Dolby® Digital/DTS® Stereo Audio Decoding. This is used for bypassing bitstream audio over HDMI and down-mixing to a secondary output for 2Ch audio systems. This unit can manage standard Dolby Digital & DTS formats up to 6.1 and output the audio as stereo (LPCM 2.0) over HDMI, S/PDIF (optical and coaxial). Audio can also be set to be managed from ARC.

## **Key benefits of using AC-AVDM-AUHD:**

**Down Scaling & Dual Output:** The AC-AVDM-AUHD has a scaling circuit built into it. The scaler can scale 4K (and HDR) --> 1080P. This is ideal for downscaling video for legacy HDMI AVR's that cannot support high-bandwidth video and bypassing the full video signal to the sink on the second .

**Audio Down-mix:** The ideal solution for down-mixing/extracting audio in various formats - LPCM 7.1CH, DTS, DTS ES, AC3, DD+, Dolby True HD

**EDID Management:** Use an on-board 4K EDID, or mimic the down stream device.

**ARC Management:** With ARC (Audio Return Channel) Management you can down-mix the audio coming back on the ARC Channel for distribution in a 2 Ch system or legacy AVR.

**Detection Indicators:** Know it is working by using the simple to read indicator lights on the front of the unit.

## ■ Features

- HDMI 2.0(a/b)
- Beyond 18Gbps Bandwidth Support (Using ICT)
- Up to 4K60 4:4:4 Support
- Full HDR Support (HDR 10 & 12 Bit)
- HDR, HDR10+ and HLG Support
- Dolby Vision Support
- 4K --> 1080P Down-scaling for mixed systems
- Supports PCM 2- Ch., LPCM 5.1 & 7.1, AC3, Dolby Digital, DD+ Dolby TrueHD, DTS, DTS ES
- Down-mix on L/R "RCA" Cables, Digital Coax, Toslink and HDMI
- EDID Management and EDID emulate
- Toslink Multichannel Audio Extraction
- ARC Support (HDMI)
- HDCP 2.2 (and all earlier versions supported)
- CEC (ARC) Support
- 3D Support
- HDCP 2.2 & Earlier
- LED Status, Link, ARC indication lights
- DIP Switches for simple EDID management, Down-mixing and Scaling
- Easy to read indicator lights
- Micro USB ISP for field firmware updates

## ■ What's Included

Whats in the box?

- AC-AVDM-AUHD
- 5V 2A Power Supply
- Mounting Ears
- Operating Instructions

## Notice

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

### **Warning**

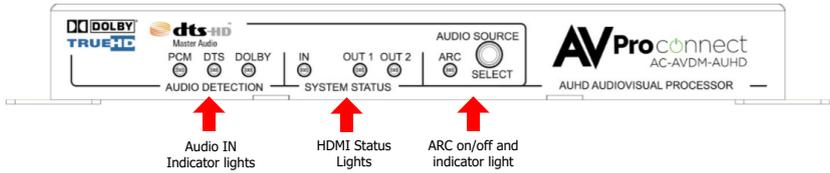
#### **To reduce the risk of fire, electric shock or product damage:**

- |  |  |   |  |
|--|--|---|--|
| <br> | <p><b>1.</b> Do not expose this device to rain, moisture, dripping or splashing and ensure that objects filled with liquids are not placed on or near the devices.</p>                           |    | <p><b>6.</b> Clean this device with a dry cloth only.</p>  |
|   | <p><b>2.</b> Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.</p>   |    | <p><b>7.</b> Unplug this device during lightning storms or when unused for long periods of time.</p> |
|   | <p><b>3.</b> 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.</p> |    | <p><b>8.</b> Protect the power cord from being walked on or pinched particularly at plugs.</p>       |
|   | <p><b>4.</b> Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.</p>                                    |  | <p><b>9.</b> Only use attachments / accessories specified by the manufacturer.</p>                   |
|   | <p><b>5.</b> Do not place sources of naked flames, such as lighted candles, on the unit.</p>   |  | <p><b>10.</b> Refer all servicing to qualified service personnel.</p>                                |

## ■ Specifications

<b>Video:</b>	
Video Resolutions	Up to 4K 60Hz 4:4:4
VESA Resolutions	Up to DCI 4K (4096x2160)
HDR Formats/Resolutions	420, 422, 444 (10 and 12 Deep Color) HDR10, HDR10+, HLG, Dolby Vision
Color Space	YUV (Component), 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 16 bit (1080), Up to 12 bit (4K)
<b>Audio:</b>	
Audio Formats Supported HDMI Pass Through	PCM 2.0 Ch, LPCM 5.1 & 7.1, Dolby Digital, DTS 5.1, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, DTS-X, Dolby Atmos
Audio Formats Supported Downmixed (2CH, Tos, SPDIF, HDMI)	PCM 2.0 Ch, LPCM 5.1 & 7.1, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS 5.1, DTS-HD Master Audio, DTS-X
<b>Other:</b>	
Bandwidth	18 Gbps
HDCP	HDCP 2.2 and earlier
<b>Ports:</b>	
HDMI (Tx & RX)	Type A (1 IN & 2 OUT)
Audio (Extracted Analog)	L/R Stereo Phono (unbalanced)
Audio (Extracted SPDIF Coax)	Phono RCA
Audio (Extracted Toslink)	Optical Toslink
USB	Micro
Power	Barrell Type
<b>Environmental:</b>	
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)
<b>Power:</b>	
Power Consumption (Total)	6 Watts Max
Power Supply	Input: AC 100-240V ~ 50/60Hz Output: DC 5V 2A
<b>Dimensions:</b>	
Dimensions (Single Unit Only, Tx or Rx are same) (Length/Width/Height) (Tx or Rx each alone)	mm: 129 x 92 x 12 inch: 5.05 x 3.62 x .47
Dimensions (Packaged Length/Width/Height) (Kit)	mm: 203 x 165 x 91 inch: 8 x 6.5 x 3.6
Weight (Unit) (Tx or Rx each alone)	.3lbs (.13Kg)
Weight (Packaged)	2lbs (.90Kg)
*Specifications subject to change without notice. Mass & dimensions are approximate	

## ■ Front Panel



### Indicator Lights :

**Audio Detection Area: (Blue)** This area indicates the incoming audio signal type. It will indicate the format type based on your "Audio Source" setting. The lights are:

- PCM = PCM Audio is being detected/decoded.
- DTS = A DTS Bitstream is being detected and decoded.
- DOLBY = A Dolby Digital Bitstream is being detected and decoded.

**System Status Area: (Blue)** This indicator shows that the HDMI Source is connected and what outputs are active/connected. The states are:

- Light Is On (Solid) = Sync w/ HDMI source is correct and solid.
- Light Is Flashing = The light flashes during the sync process. If it is flashing continuously, a picture may not be present
- Light Is Off = No Sink or source is detected, please check the cable and check to ensure all connected devices are powered on.

If the **BLUE HDMI SIGNAL STATUS LIGHTS** are flashing or are off AND you have no image check the following:

1. The source. Plug it directly into the display to be sure it's functioning properly.
2. Try a longer HDMI cable. Some HDMI cables do not sync well at shorter lengths.
3. Set the EDID to state #1 (See below).
4. Contact AVProEdge if these suggestions do not work.

### Button Operation

**Short (quick) press:** Toggles between the two available states for audio outputs. There are two states:

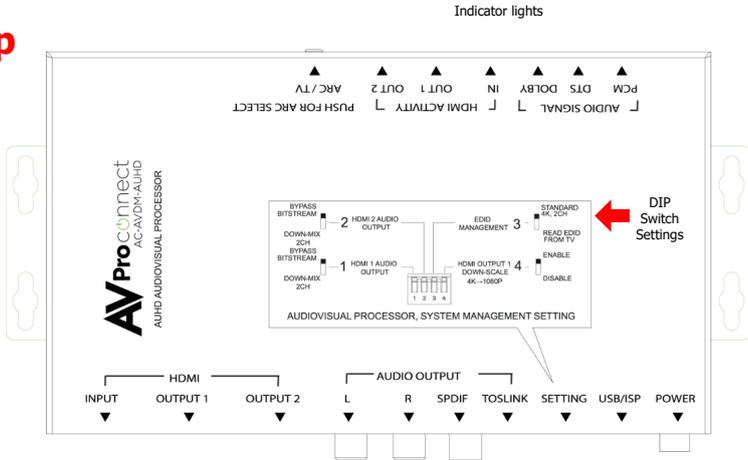
- Blue Light On = Audio will be extracted/decoded from the Audio Return Channel on HDMI Output #2
- Light Off = Audio is extracted from the input source device (This is the default mode)
- \*NOTE:

**Long (3 Seconds) Press:** \*Temporary function for Dolby Certification only

1. Press and hold for 3-seconds toggle Dolby DRC (Dynamic Range Compression) - The ARC LED will blink once indicating the DRC mode has been changed.
2. When you re-power the AC-AVDM-AUHD, Dolby DRC will be on

## ■ Top & Rear Panel

### Top



### Rear



### HDMI Outputs:

- **HDMI OUT 1** - Can down-scale, ARC not supported
- **HDMI OUT 2** - No down-scale, ARC Supported

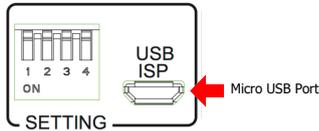
### DIP Switch Settings:

Each switch controls one setting only. OFF=UP --- ON=DOWN

DIP switch \ status	OFF	ON
1	Output1 HDMI Audio Bypass Bitstream	Output1 HDMI Audio Down-Mix 2Ch
2	Output2 HDMI Audio Bypass Bitstream	Output2 HDMI Audio Down-Mix 2Ch
3	EDID Use Standard 4K 2CH EDID	EDID Use Read From TV(Only Output2)
4	Down-Scale ON	Down-Scale OFF

## ■ Serial Communication:

To communicate with the AC-AVDM-AUHD you must use a MICRO USB connector. The Serial to USB is internal and the driver should automatically install once plugged in. It is a universal CH340 driver. If you have trouble and need this driver please contact us.



### Serial Settings

- Baud Rate - 57600
- Bit Number - 8
- Checksum/Flow Control/Parity - NONE
- Stop Bits - 1

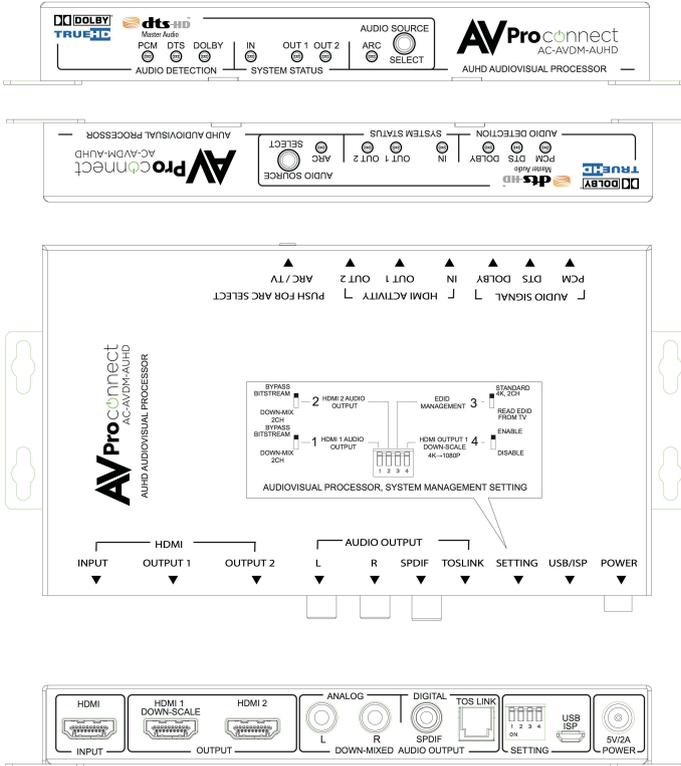
### Serial Commands:

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=====  
== 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]}(0=Single)} ==  
== SET ARC ON/OFF : Set Audio Return Channel ON/OFF ==  
== GET ADDR : Get System Address ==  
== GET CAS : Get Cascade Mode Status ==  
== GET ARC : Get Audio Return Channel Status ==  
== GET STA : Get System System Status ==  
== GET INx SIG STA : Get Input x Signal Status{x=[1]} ==  
=====  
== Output Setup Command : (Note:output number(x)=HDMI(x),x=1-2) ==  
== SET OUTx EXA EN/DIS : Set Ex-Audio Output Enable/Disable{x=[0]}(0=ALL)} ==  
== SET OUTx STREAM ON/OFF: Set Output x Stream ON/OFF{x=[0~2]}(0=ALL)} ==  
== GET OUTx EXA : Get Ex-Audio Output Enable/Disable Status{x=[0]}(0=ALL)} ==  
== GET OUTx EDID DATA : Get Output x EDID DATA{x=[1~2]} ==  
== GET OUTx STREAM : Get Output x Stream ON/OFF Status{x=[0~2]}(0=ALL)} ==  
=====
```

# AC-AVDM-AUHD

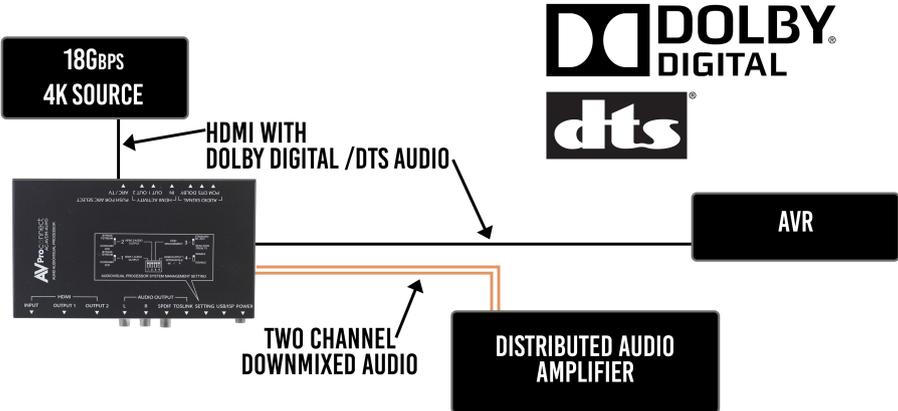


**Form Factor:**

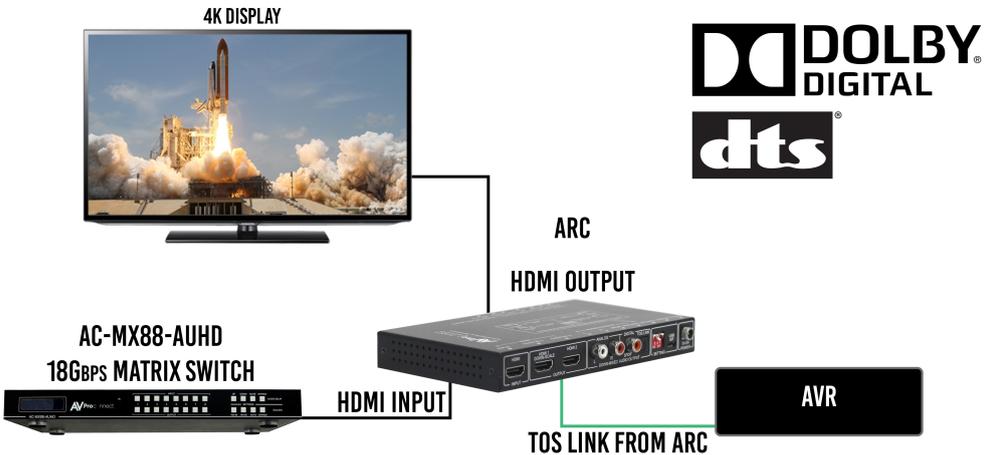


## Application Diagrams:

Down-mix for a distributed system with uncompressed bypass:



## ARC Example:



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## ▪ **Maintenance**

To ensure reliable operation of this product as well as protecting the safety of any person using or handling this device while powered, please observe the following instructions.

- Use the power supplies provided. If an alternate supply is required, check voltage, polarity, and that it has sufficient power to supply the device it is connected to.
- Do not operate these products outside the specified temperature and humidity range given in the above specifications.
- Ensure there is adequate ventilation to allow this product to operate efficiently.
- Repair of the equipment should only be carried out by qualified professionals as these products contain sensitive components that may be damaged by any mistreatment.
- Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.
- 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

## ▪ Support

Should you experience any problems while using this product, first, refer to the Troubleshooting section of this manual before contacting Technical Support.

When calling, the following information should be provided:

- Product name and model number
- Product serial number
- Details of the issue and any conditions under which the issue is occurring

## ▪ Warranty

If your product does not work properly because of a defect in materials or workmanship, AVProEdge (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.

This warranty extends to products purchased directly from AVPro or an authorized dealer. AVPro is not liable to honor this warranty if the product has been used in any application other than that for which it was intended, has been subjected to misuse, accidental damage, modification or improper installation procedures, unauthorized repairs or is outside of the warranty period. Please direct any questions or issues you may have to your local dealer before contacting AVPro.

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Thank you for choosing AVProEdge!

Please contact us with any questions. We are happy to be of service!



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