

User Manual

AC-DA28-AUHD



18G_{BPS} 2X8 DISTRIBUTION AMP WITH 2 OUTPUT ZONES



Introduction

AC-DA28-AUHD is an 18GBPS, full bandwidth HDMI2.0a (HDR) with HDCP2.2 eight-way HDMI splitter. Functionally, distributes the two input HDMI signals to eight HDMI outputs (two switchable zones).

AC-DA28-AUHD has the ability of pre-emphasis and equalization. Multiple cascaded AC-DA28-AUHD achieves long distance transmission of HDMI signal of more than 15 meters even in 4K (HDR) resolution.

AC-DA28-AUHD offers solutions for usage as a component of digital HDMI distributions and entertainment systems also UHDTV/4K retail and general show sites. Use in conjunction with UHDTV, UHD Projector, STB, UHD-BD, UHD Media Player and in environment where noise, space and security are concerns. Fits perfectly in data center control rooms, information distribution premises, conference and presentation rooms, school educational facilities and corporate training environments.

Contents


Introduction.....	2
Product Overview.....	4
Features.....	4
Specifications.....	6
Package Contents.....	7
Connections and Operations.....	7
Panel Descriptions.....	7-8
Connection Diagram.....	9
Web Interface/Switching.....	10
Web Interface/Video Settings.....	11
Web Interface/EDID Settings.....	12-14
Web Interface/System Settings.....	15
Maintenance.....	16
Command List.....	17
Maintenance.....	18
Support/Warranty.....	19
Troubleshooting.....	20

■ Product Overview (Model Number: AC-DA28-AUHD)



■ Features

- Easy to Use: Install in seconds, no need for setting.
- Distribution: Two HDMI inputs, two switchable output zones.
- Supports up to 18GBPS with resolutions of 4K60(YUV444), 4K30, 1080p, 1080i, 720p and other standard Video formats, PAL and NTSC.
- Full HDR Support (HDR 10 & 12 Bit)
- Dolby Vision, HDR10 (10+) and HLG Support
- HDCP 2.2 (and all earlier versions supported)
- LAN Web GUI Control and full API
- Remote Status Monitoring
- Advanced EDID Management
- Digital Toslink Out
- Locking Power Connector
- HDMI 2.0(a/b) w/ HDR.
- Cascadable
- Mounting ears are included for easy fixation on wall, furniture or ceiling.

 **Notice** AVProEdge reserves 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>1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>	 <p>6. Clean this apparatus only with a dry cloth.</p>
 <p>2. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>	 <p>7. Unplug this apparatus during lightning storms or when unused for long periods of time.</p>
 <p>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.</p>	 <p>8. Protect the power cord from being walked on or pinched particularly at plugs.</p>
 <p>4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.</p>	 <p>9. Only use attachments / accessories specified by the manufacturer.</p>

VIDEO:	
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+, DOLBY VISION (60), HLG
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)
AUDIO:	
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, DTS-X, DOLBY ATMOS
DISTANCE:	
HDMI IN/OUT (4K60 4:4:4)	UP TO 50 FEET (USING BULLET TRAIN HDMI)
HDMI IN/OUT (W/ AOC CABLE) (4K60 4:4:4)	UP TO 130 FEET (USING BULLET TRAIN AOC)
OTHER:	
BANDWIDTH	18 GBPS
HDCP	HDCP 2.2 AND EARLIER
PORTS:	
LAN	RJ45 W/ WEB INTERFACE/CONTROL
FIRMWARE	MINI USB
ENVIRONMENTAL:	
OPERATING TEMPRATURE	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:	
POWER CONSUMPTION (TOTAL)	4 WATTS MAX
POWER SUPPLY - MATRIX	INPUT: AC 100-240V ~ 50/60HZ OUTPUT: DC 12V 2A
DIMENSIONS:	
DIMENSIONS (UNIT ONLY HEIGHT/DEPTH/WIDTH)	MM: 26.9 X 93.7 X 234.95 INCH: 1.06 X 3.69 X 9.25
DIMENSIONS (PACKAGED HEIGHT/DEPTH/WIDTH)	MM: 76.2 X 179.324 X 304.8 INCH: 3 X 7.06 X 12
WEIGHT (UNIT)	1.36 LBS (.62 KG)
WEIGHT (PACKAGED)	2.21 LBS (1 KG)
*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS & DIMENSIONS ARE APPROXIMATE	

■ Package Contents

- ① Main unit. P/N: AC-DA28-AUHD
- ② 12V 2A Locking Power Supply (100-240V input).
- ③ Mounting Ears

■ Connections and Operations

- 1) Connect the HDMI input source into AC-DA28-AUHD
- 2) Connect the HDMI output equipment (Displays) into AC-DA28-AUHD
- 3) Insert the DC side of 12V power supply into AC-DA28-AUHD and then connect the AC side of the Power supply into the wall outlet.
- 4) Plugging in the unit automatically powers up the device.

 **NOTE:** Insert / Extract cables gently.

■ Panel Descriptions

Front Panel



Activity Display (Front):

- 1) When Power is applied all lights flash BLUE and the machine begins to function. If no devices are plugged in, you can verify power by looking at the zone A/B buttons on the right side of the unit, they should be lit up blue.
- 2) When the INPUT device is plugged in, the INPUT light stays SOLID BLUE.
- 3) When a sink (display) is plugged into an OUTPUT, the OUTPUT light will go SOLID.

Back Panel



- Power input
- HDMI inputs (x2)
- HDMI outputs (x8)
- IR, RS-232 and LAN Control Options (Micro USB on side)
- Balanced Analog Out, for extractable 2Ch Audio
- Toslink Audio Port - Supports PCM, LPCM (up to 7CH), Dolby Digital, Dolby Digital Plus, DTS, DTS-HD, DTS Master Audio, which is ideal for multi-channel audio systems and older AVRs that do not support 18Gbps.

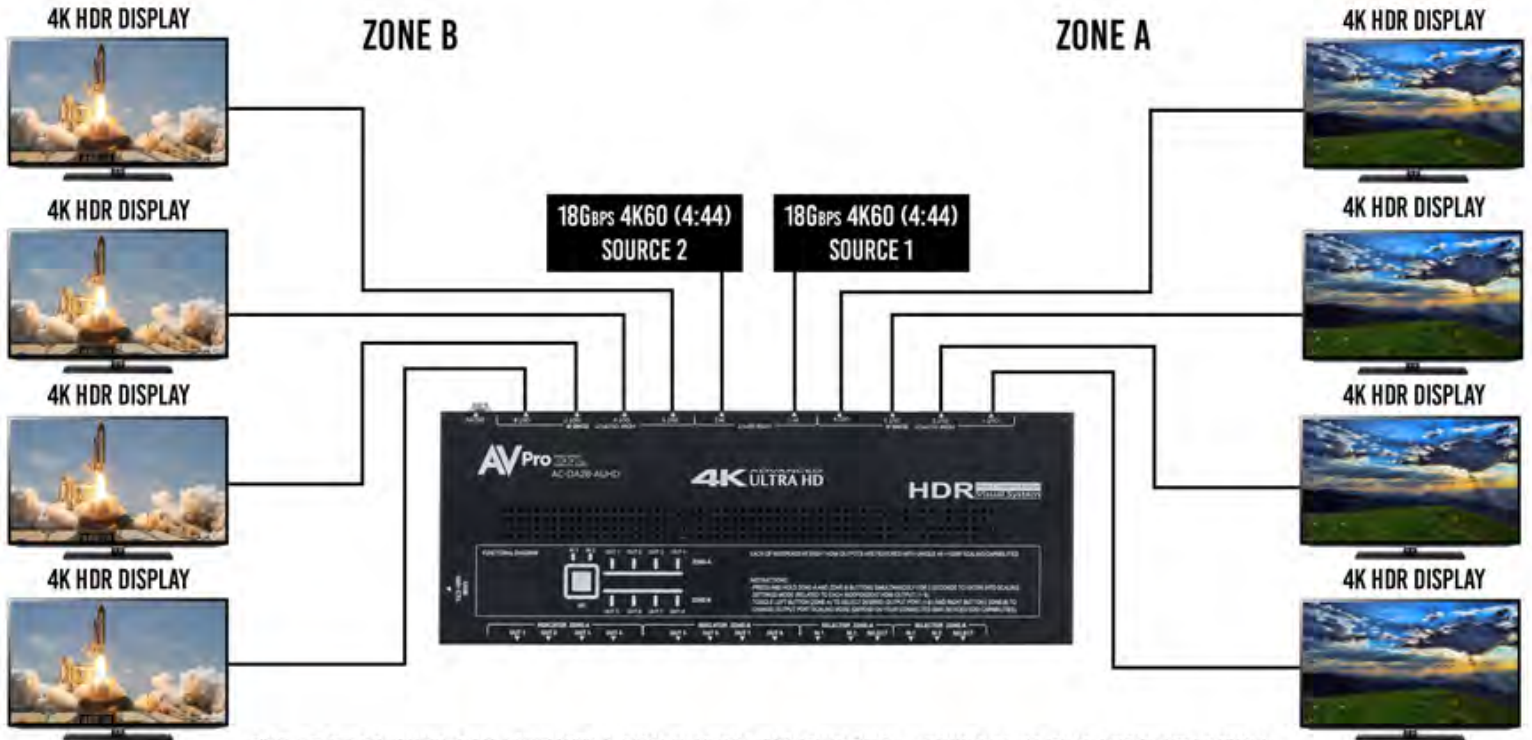
Device Top Cover



Device cover is labeled with functionality diagram, instructions for front panel switching and scaling options.



CONNECTION DIAGRAM



THE AC-DA28-AUHD CAN AMPLIFY A SIGNAL FROM ANY TWO 18Gbps SOURCES TO TWO SEPARATE ZONES.

Quick Network Connect to Web Interface:

Use the following steps to quickly and immediately connect to the matrix switch:

1. Connect the LAN port into an active router port.
2. On most networks you can simply type the Default IP address into any web browser. The Default IP Address is 192.168.1.239.

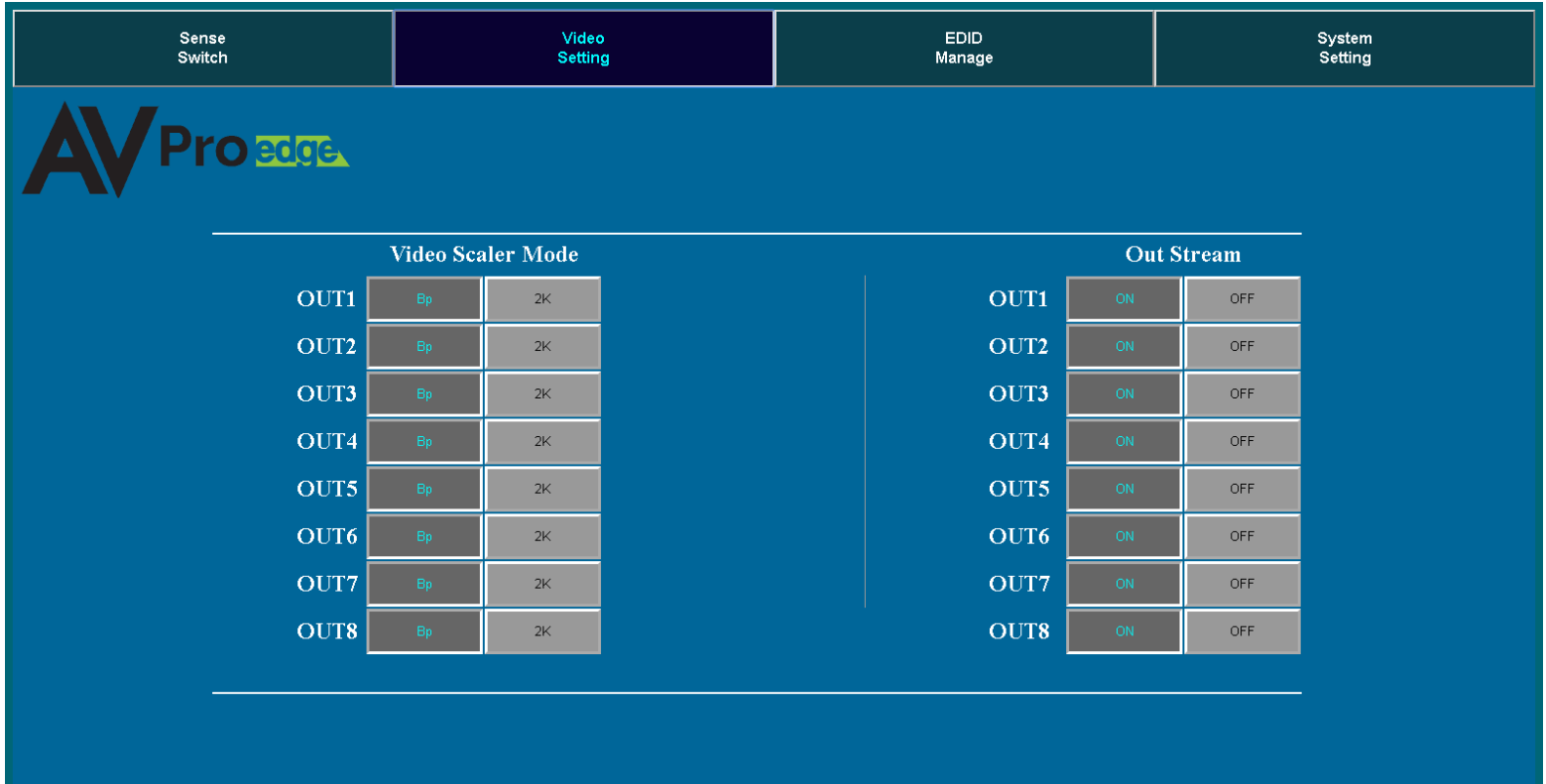
Web Interface: Switching

Use this page to switch between inputs and outputs from the web interface.

The screenshot shows the AVProedge web interface with a navigation bar at the top containing four tabs: Sense Switch, Video Setting, EDID Manage, and System Setting. The main content area features the AVProedge logo and two sections: Sense Switch and Audio Status. The Sense Switch section has three rows (ZONE_A, ZONE_B, ALL) with two columns (IN1, IN2). The Audio Status section has two columns (ON, OFF) and an Audio Binding section with two columns (OUT1, OUT2).

Sense Switch		Audio Status		
ZONE_A	IN1	IN2	ON	OFF
ZONE_B	IN1	IN2	Audio Binding	
ALL	IN1	IN2	OUT1	OUT2

Web Interface: Video Settings



The screenshot shows the AVProedge web interface for the AC-DA28-AUHD device. The 'Video Setting' tab is active. The interface displays two tables for configuring video outputs (OUT1 through OUT8).

Video Scaler Mode			Out Stream		
OUT1	Bp	2K	OUT1	ON	OFF
OUT2	Bp	2K	OUT2	ON	OFF
OUT3	Bp	2K	OUT3	ON	OFF
OUT4	Bp	2K	OUT4	ON	OFF
OUT5	Bp	2K	OUT5	ON	OFF
OUT6	Bp	2K	OUT6	ON	OFF
OUT7	Bp	2K	OUT7	ON	OFF
OUT8	Bp	2K	OUT8	ON	OFF

Video Scaler Mode:

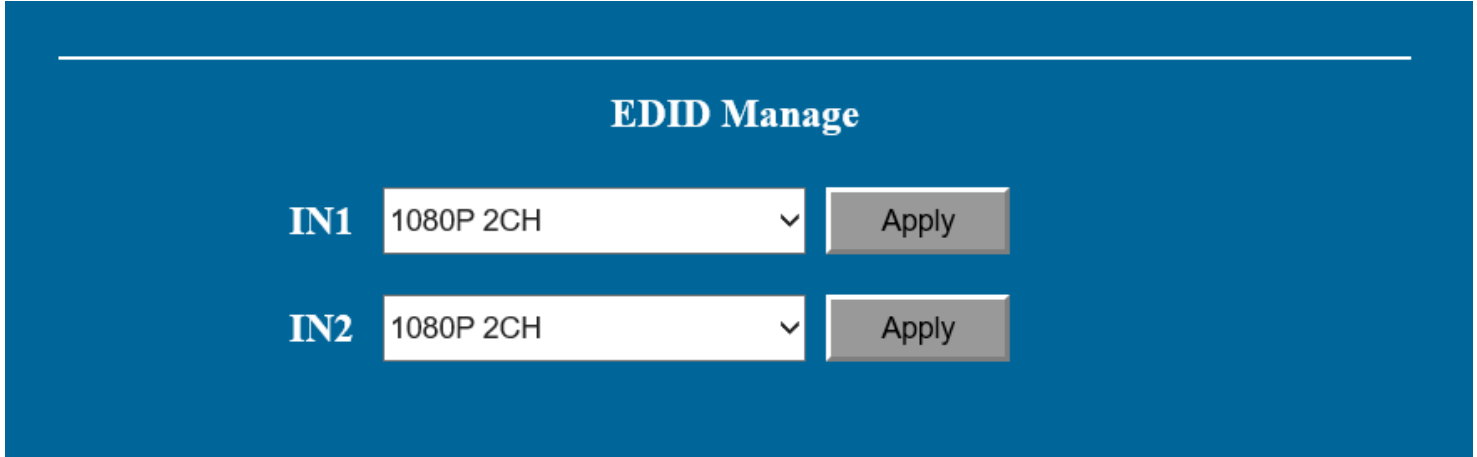
- Bp = Bypass, the scaler is off
- 2K = Will downscale that output to a 1080p signal

Out Stream:

- ON = Video output is ON, video will pass on that OUTPUT
- OFF = Video output is OFF, video will not pass on that OUTPUT

EDID Settings:

The AC-DA28-AUHD uses the web interface for EDID management. The default EDID out of the box is 0:1080P 2Ch. Custom EDID settings are below.

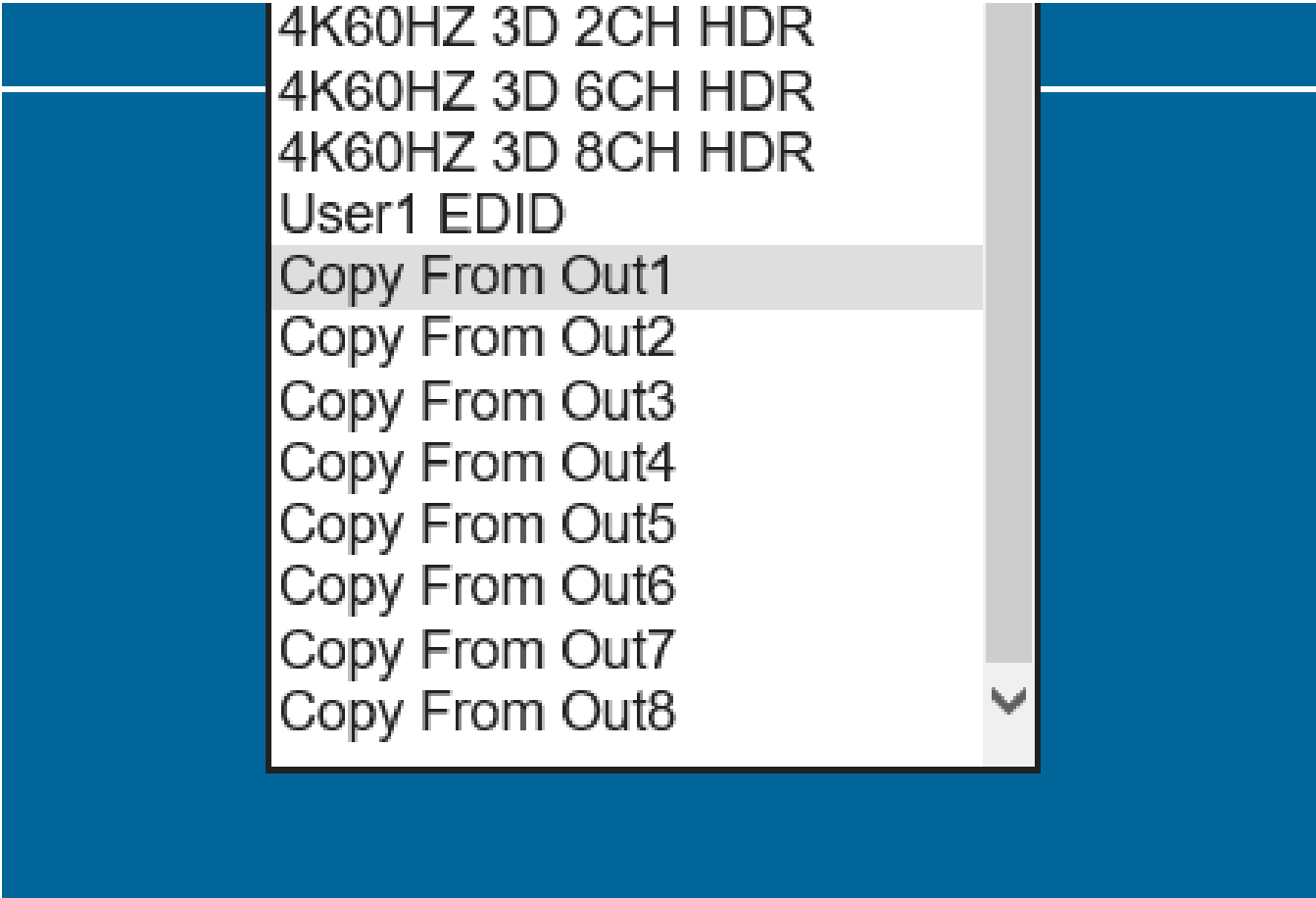


EDID Settings:

- | | |
|------------------------------|----------------------------------|
| 00: 1080P_2CH(PCM) | 20: 1080P_3D_8CH_HDR |
| 01: 1080P_6CH | 21: 4K30Hz_3D_2CH(PCM)_HDR |
| 02: 1080P_8CH | 22: 4K30Hz_3D_6CH_HDR |
| 03: 1080P_3D_2CH(PCM) | 23: 4K30Hz_3D_8CH_HDR |
| 04: 1080P_3D_6CH | 24: 4K60Hz(Y420)_3D_2CH(PCM)_HDR |
| 05: 1080P_3D_8CH | 25: 4K60Hz(Y420)_3D_6CH_HDR |
| 06: 4K30Hz_3D_2CH(PCM) | 26: 4K60Hz(Y420)_3D_8CH_HDR |
| 07: 4K30Hz_3D_6CH | 27: 4K60Hz_3D_2CH(PCM)_HDR |
| 08: 4K30Hz_3D_8CH | 28: 4K60Hz_3D_6CH_HDR |
| 09: 4K60Hz(Y420)_3D_2CH(PCM) | 29: 4K60Hz_3D_8CH_HDR |
| 10: 4K60Hz(Y420)_3D_6CH | 30: USER 1EDID (NOTE 1) |
| 11: 4K60Hz(Y420)_3D_8CH | 31: COPY FROM OUT1 |
| 12: 4K60Hz_3D_2CH(PCM) | 32: COPY FROM OUT2 |
| 13: 4K60Hz_3D_6CH | 33: COPY FROM OUT3 |
| 14: 4K60Hz_3D_8CH | 34: COPY FROM OUT4 |
| 15: 1080P_2CH(PCM)_HDR | 35: COPY FROM OUT5 |
| 16: 1080P_6CH_HDR | 36: COPY FROM OUT6 |
| 17: 1080P_8CH_HDR | 37: COPY FROM OUT7 |
| 18: 1080P_3D_2CH(PCM)_HDR | 38: COPY FROM OUT8 |
| 19: 1080P_3D_6CH_HDR | |

EDID Setting Cont. (Notes):

Note1: *You can copy the EDID from any output and apply it to any input. Select "Copy EDID from Output x" (x=1-8) then click Apply. This will copy the EDID from the display and apply it to the selected input. This new EDID will be stored as "USER EDID 1".



4K60HZ 3D 2CH HDR
4K60HZ 3D 6CH HDR
4K60HZ 3D 8CH HDR
User1 EDID
Copy From Out1
Copy From Out2
Copy From Out3
Copy From Out4
Copy From Out5
Copy From Out6
Copy From Out7
Copy From Out8

EDID Settings from the Front Panel:

The built in EDIDs can be applied via the front panel as well.

To access the EDID management from the front panel.

1. Hold Zone A & Zone B Input buttons for 5 Seconds
2. Zone B Input lights will begin to blink
3. Zone A input light will show which Inputs EDID is being managed
 - a. Use Zone B Input Button to switch between Inputs
4. Looking at the Output lights 1-8 use the Zone A Input button to switch between EDIDs
 - a. Follow EDID Table for desired EDID
5. Hold Zone B Input button to lock in EDID
See table below for EDID list and the corresponding Input Lights

00000000	1080P_2CH(PCM)
00000001	1080P_6CH
00000010	1080P_8CH
00000011	1080P_3D_2CH(PCM)
00000100	1080P_3D_6CH
00000101	1080P_3D_8CH
00000110	4K30Hz_3D_2CH(PCM)
00000111	4K30HZ_3D_6CH
00001000	4K30HZ_3D_8CH
00001001	4K60Hz(Y420)_3D_2CH(PCM)
00001010	4K60Hz(Y420)_3D_6CH
00001011	4K60Hz(Y420)_3D_8CH
00001100	4K60HZ_3D_2CH
00001101	4K60HZ_3D_6CH
00001110	4K60HZ_3D_8CH
00001111	1080P_2CH(PCM)_HDR
00010000	1080P_6CH_HDR
00010001	1080P_8CH_HDR
00010010	1080P_3D_2CH(PCM)_HDR
00010011	1080P_3D_6CH_HDR
00010100	1080P_3D_8CH_HDR
00010101	4K30Hz_3D_2CH(PCM)_HDR
00010110	4K30Hz_3D_6CH_HDR
00010111	4K30Hz_3D_8CH_HDR
00011000	4K60Hz(Y420)_3D_2CH(PCM)_HDR
00011001	4K60Hz(Y420)_3D_6CH_HDR
000110101	4K60Hz(Y420)_3D_8CH_HDR
00011011	4K60Hz_3D_2CH(PCM)_HDR
00011100	4K60Hz_3D_6CH_HDR
00011101	4K60Hz_3D_8CH_HDR
00011110	USER1_EDID

Web Interface: System Settings

IP Settings:

Set network settings such as:

- Static IP
- Subnet Mask
- Router IP
- TCP Port
- Enable DHCP

Defaults

192.168.1.239
 255.255.255.0
 192.168.1.1
 23

Port Alias Settings:

Rename inputs and outputs for easy management. Each custom name is limited to eight (8) characters.

RS-232 and TCP/IP Commands:

The AC-DA28-AUHD can be controlled with either RS-232 or TCP/IP commands. Certain switching or format configurations can only be done using these commands. We recommend using either the MyUART (RS-232 - free) or Hercules (TCP/IP - free) apps as they are very easy to use for sending commands to the machine.

MyUart is available for download on our website <https://www.avproedge.com/drivers.html>

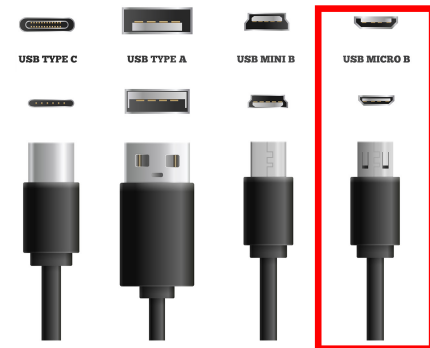
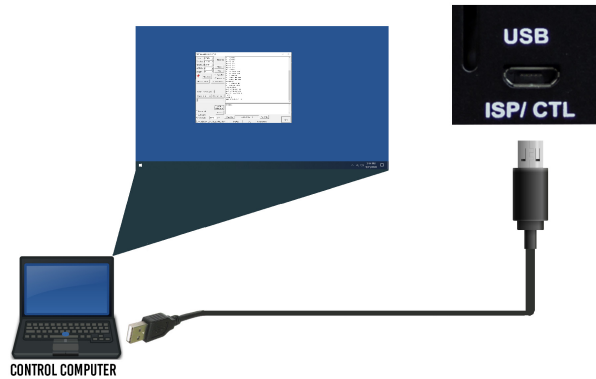
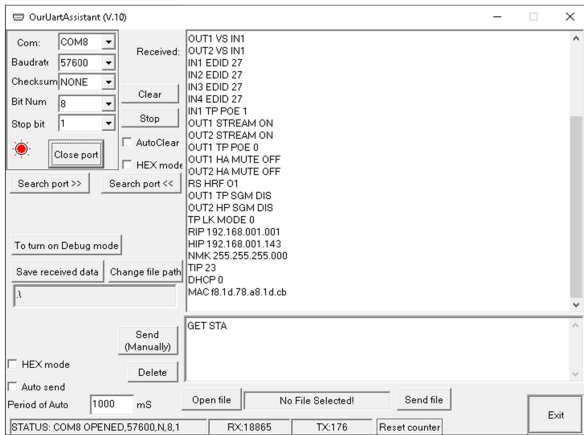
For TCP/IP control commands use Telnet Port 23.

For RS-232, use a null modem serial cable adapter and set the serial communications to: 57600,n,8,1 (baud: 57600, no parity, 8 data bits and 1 stop bit) with no handshaking.

Please add a return (Enter key) after each command when using direct commands.

The unified command list (ASCII) is listed on the next page.

USB CONTROL FOR AVPRO EDGE



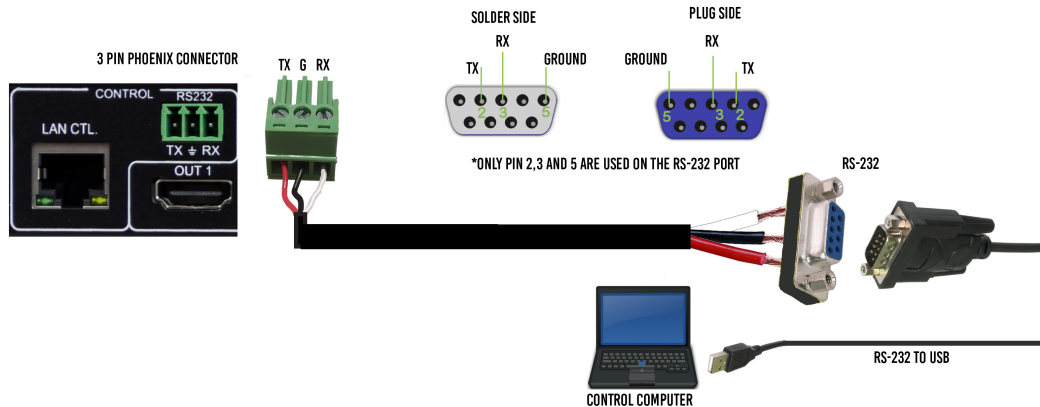
WWW.AVPROEDGE.COM/DRIVERS

OTHER TOOLS & DRIVERS

MyUart Serial Communicator: Used to send direct serial commands to our products.

Universal FTDI USB->Serial Driver: Used with SDX-G/SDX-A 6 Fax 6 Hound and several USB-Serial converters supplied by AVPro Edge

RS-232 CABLE FOR AVPRO EDGE



System HELP		
Azz : All Commands start by Prefix System Address zz, if [01~99]		
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)}	
GET ADDR	: Get System Address	
GET STA	: Get System System Status	
GET INx SIG STA	: Get Input x Signal Status{x=[0~2](0=ALL)}	

Output Setup Commands:	: (Note:output number 0=All HDMI Output,[1-8]=HDMI Output Number)	
	: (Note:output Zone number 1=HDMI OUTPUT[1-4],2=HDMI OUTPUT[5-8])	
SET OUTx VS INy	: Set Output Zone x To Input y {x=[0~2](0=ALL), y=[1~2]}	
SET OUTx VIDEOy	: Set Output VIDEO Mode {x=[1-8], y=[1~2](1=BYPASS,2=4K->2K)}	
SET OUTx EXA EN/DIS	: Set Ex-Audio Output Enable/Disable{x=[0]}	
SET EXA BTV OUTx	: Set Ex-Audio Output bind to Output Zone{x=[1~2]}	
SET OUTx STREAM ON/OFF	: Set Output x Stream ON/OFF{x=[0~8](0=ALL)}	
GET OUTx VS	: Get Output Zone x Video Route{x=[0~2](0=ALL)}	
GET OUTx VIDEO	: Get Output x VIDEO Mode{x=[0~8](0=ALL)}	
GET OUTx EXA	: Get Ex-Audio Output Enable/Disable Status{x=[0]}	
GET EXA BTV OUT	: Get Ex-Audio Output bind to Output	
GET OUTx EDID DATA	: Get Output x EDID DATA{x=[1-8]}	
GET OUTx STREAM	: Get Output x Stream ON/OFF Status{x=[0~8](0=ALL)}	

Input Setup Command	: (Note:input number 1=HDMI INPUT1,2=HDMI INPUT2)	
SET INx EDID y	: Set Input x EDID{x=[0-2](0=All), y=[0~30]}	
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
12:4K60Hz_3D_2CH	13:4K60Hz_3D_6CH	14:4K60Hz_3D_8CH
15:1080P_2CH(PCM)_HDR	16:1080P_6CH_HDR	17:1080P_8CH_HDR
18:1080P_3D_2CH(PCM)_HDR	19:1080P_3D_6CH_HDR	20:1080P_3D_8CH_HDR
21:4K30Hz_3D_2CH(PCM)_HDR	22:4K30Hz_3D_6CH_HDR	23:4K30Hz_3D_8CH_HDR
24:4K60Hz(Y420)_3D_2CH(PCM)_HDR	25:4K60Hz(Y420)_3D_6CH_HDR	26:4K60Hz(Y420)_3D_8CH_HDR
27:4K60Hz_3D_2CH(PCM)_HDR	28:4K60Hz_3D_6CH_HDR	29:4K60Hz_3D_8CH_HDR
30:USER1_EDID		
SET INx EDID CY OUTy	: Copy Output y EDID To Input x(USER1 BUF) {x=[0-2](0=All), y=[1-8]}	
SET INx EDID Uy DATAz	: Write EDID To User y Buffer of Input x {x=[0-2](0=All), y=[1],z=[EDID Data]}	
GET INx EDID	: Get Input x EDID Index {x=[0-2](0=All)}	
GET INx EDID y DATA	: Get Input x EDID y Data {x=[1-2],y=[0~30]}	

IR Code Setup		
SET IR SYS xx.yy	: Set IR System Code {xx=[00~FFH],yy=[00~FFH]}	
SET IR OUTx INy CODE zz	SET IR OUTx INy CODE zz {x=[1~2],y=[1~2],zz=[00~FFH]}	
GET IR SYS	: Get IR System Code	
GET IR OUTx INy CODE	GET IR OUTx INy CODE {x=[1~2](0=All),y=[1~2]}	

Network Setup Command		
SET RIP xxx.xxx.xxx.xxx	: Set Route IP Address to xxx.xxx.xxx.xxx	
SET HIP xxx.xxx.xxx.xxx	: Set Host IP Address to xxx.xxx.xxx.xxx	
SET NMK xxx.xxx.xxx.xxx	: Set Net Mask to xxx.xxx.xxx.xxx	
SET TIP zzzz	: Set TCP/IP Port to zzzz	
SET DHCP y	: Set DHCP {y=[0~1](0=Dis,1=Enable)}	
GET RIP	: Get Route IP Address	
GET HIP	: Get Host IP Address	
GET NMK	: Get Net Mask	
GET TIP	: Get TCP/IP Port	
GET DHCP	: Get DHCP Status	
GET MAC	: Get MAC Address	

▪ 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 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

The unit should be serviced by qualified service personnel if:

■ 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.

Troubleshooting

- Verify Power - Front Panel Pg.7-8
 - Try power-cycling the device while all cables are connected
- Verify Connections - Front Panel Pg.7-8
 - If the lights are not showing a connection, try Hot Plugging the cable (remove and re-insert while powered up)
- Possible EDID issue. Default out of the box is EDID is a 1080p 2Ch. EDID. Try one of the other Canned EDIDs built in - Pg.11. You can also copy the EDID form a display and apply that to the source - Pg. 11, 12, 14
- 1080p signal working but not 4k - Verify all connected devices are 4k capable.
- Still having issues, contact us
 - Support Direct +1-605-977-3477
 - All inquiries +1-605-274-6055
 - Submit a support request ticket
 - <https://support.avproedge.com/hc/en-us/requests/new>

Thank you for choosing AVProEdge!

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



AVProEdge
2222 E 52nd St N ~ Sioux Falls, SD 57104
1-877-886-5112 ~ 605-274-6055
support@avproedge.com