

# AC-DA210-HDBT

HDBaseT 2-8-2 splitter with Audio De-Embedding, EDID Management, and switchable inputs.

## Operation Manual



The AC-DA210-HDBT is designed for massive distributions over extreme distances. Using tried and true HDBaseT Technology, this distribution amplifier has simplified long distance distribution while giving the end points undisturbed HD and UHD images.

Simplicity and "Plug & Play" are focal points of this unit. With RS-232 and IR you can manage your end points as well for things like "Power On" or "Power Off". Additionally, these have two switchable inputs making for more robust systems. The dual HDMI inputs allow you to expand the switching virtually forever.

The AC-DA210-HDBT is ideal for Retail Spaces, Bars, Restaurants, Showrooms and Public Spaces where you want to have consistent messaging, images or signage across large spaces. Having two inputs allows you to option between sources like custom signage, computers and any HDCP protected content.

## Features:

- Advanced Equalization and amplification of outputs for smooth switching
- 2 HDMI inputs, In2 supports HDCP2.2.
- Advanced EDID Management
- Support HDMI 2.0 4K60 4:2:0
- IR, RS-232 Control Options
- IR, RS232 routed to HDBaseT output
- Digital Toslink Out
- L/R Analog Out
- Digital S/PDIF Out
- Good little clear circuit ensure the cascading capability

## Easy to use:

- Install in seconds
- Feature rich
- Powerful EDID management
- Front Panel Control
- RS-232 Control

## In The Box:

- AC-DA210-HDBT
- 48V Power Supply
- 2x Phoenix Connectors (RS-232 and 2CH Audio)
- Mounting Ears

## Quick Installation:

1. Connect the HDMI input sources (Blu-ray, Set Top Box, etc...) to the AC-DA210-HDBT.
2. Connect the HDBT/HDMI output devices (AVR, Display, Distribution Amplifier, Extender) to the AC-DA210-HDBT.
3. Power on the sources.
4. Connect the power supply into the AC-DA210-HDBT.
5. Turn on output devices/displays.
6. Use the front panel controls to control the DA.

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<b>VIDEO:</b>	
VIDEO RESOLUTIONS	UP TO 4K 60HZ 4:2:0 / 4K 30HZ 4:4:4
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	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
EXTRACTED AUDIO	2CH (PHOENIX), DIGITAL (TOSLINK AND SPDIF)
<b>DISTANCE:</b>	
HDBASET (CAT) DISTANCE (4K)	40 METERS / 131 FEET (CAT 6A)
HDBASET (CAT) DISTANCE (FULL HD)	70 METERS / 230 FEET (CAT 6A)
HDMI LEAD IN/OUT (4K60 4:4:4)	UP TO 50 FEET (USING BULLET TRAIN HDMI)
HDMI LEAD IN/OUT (W/ AOC CABLE) (4K60 4:4:4)	UP TO 130 FEET (USING BULLET TRAIN AOC)
<b>OTHER:</b>	
BANDWIDTH	10.2 GBPS
HDCP	HDCP 2.2 AND EARLIER
<b>PORTS:</b>	
HDMI (TX & RX)	TYPE A
HDBASET	RJ45 W/ POH FOR HDBASET RECEIVERS
IR (TX & RX)	3.5MM STEREO
RS232	3 PIN TERMINAL BLOCK
POWER	PHOENIX
<b>ENVIRONMENTAL:</b>	
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)
<b>POWER:</b>	
POWER CONSUMPTION (TOTAL)	88 WATTS (MAX)
POWER SUPPLY - MATRIX	INPUT: AC 100-240V ~ 50/60HZ OUTPUT: DC 48V 2A
<b>DIMENSIONS:</b>	
DIMENSIONS (UNIT ONLY HEIGHT/DEPTH/WIDTH)	MM: 43.69 X 143 X 441.45 INCH: 1.72 X 5.63 X 17.38
DIMENSIONS (PACKAGED HEIGHT/DEPTH/WIDTH)	MM: 88.9 X 336.55 X 495.3 INCH: 3.5 X 13.25 X 19.5
WEIGHT (UNIT)	4.8 LBS/2.18 KG
WEIGHT (PACKAGED)	7.4 LBS/ 3.36 KG
<b>*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS &amp; DIMENSIONS ARE APPROXIMATE</b>	



## Device Overview:

These devices are perfect for distributing any one/two sources to an unlimited amount of displays. (One source at a time)

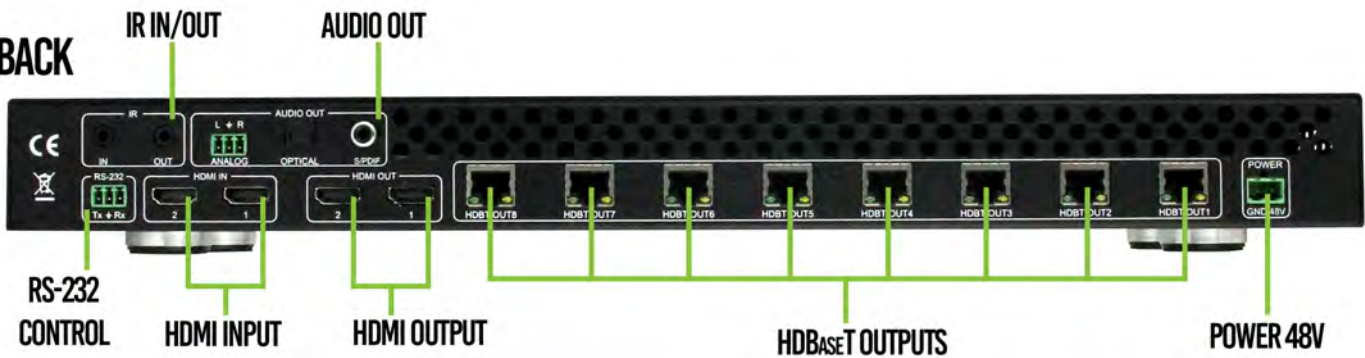
Think:

- **Retail signal distribution** – Big Box Stores & Local Retail for Advertising; School’s & Office’s for Infoboards – 1000’s of new accounts just opened up to you!
- **Bars & Restaurants** – a very simple way to “split” the signal to show in multiple locations.
- **Digital Signage** – low cost method for airports, rail, subway and more to distribute high value 4K signals
- **A word on Cascading** – need more displays? Just connect an output to the next devices input and keep stringing the displays together – now you have a 1 x 500 DA that can switch two sources!

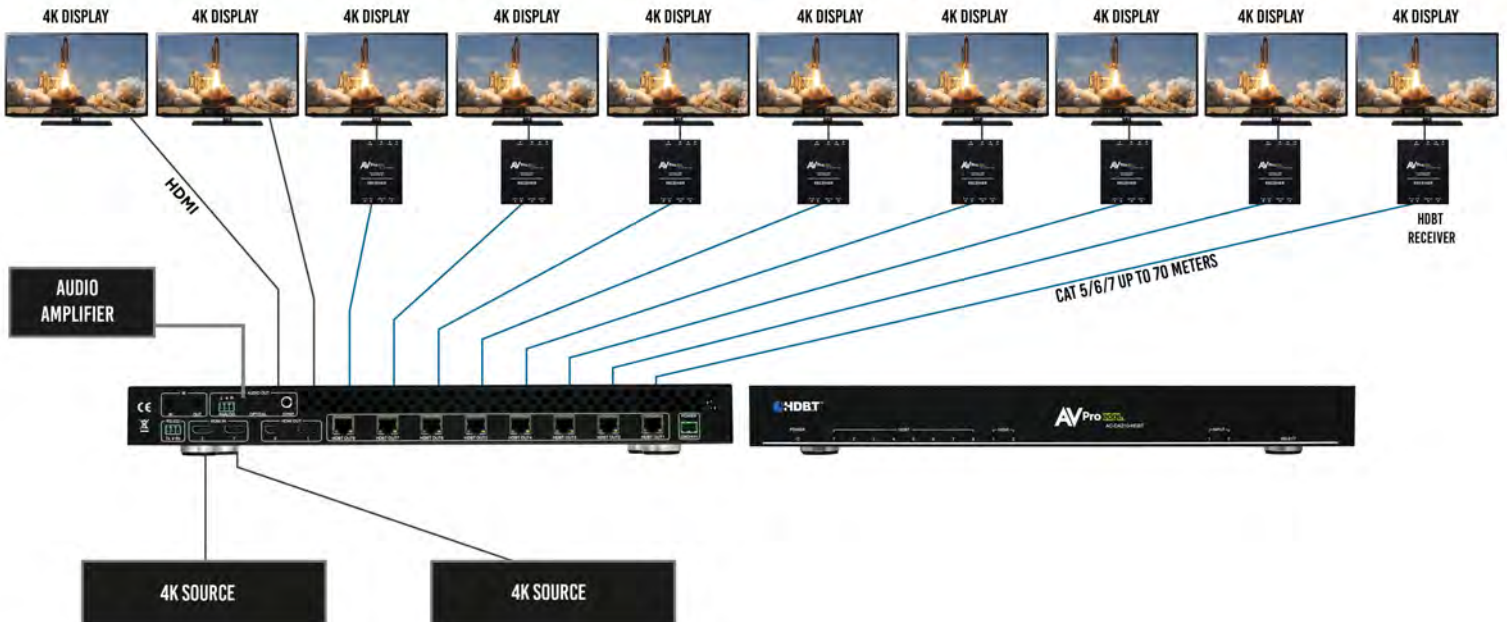
### FRONT



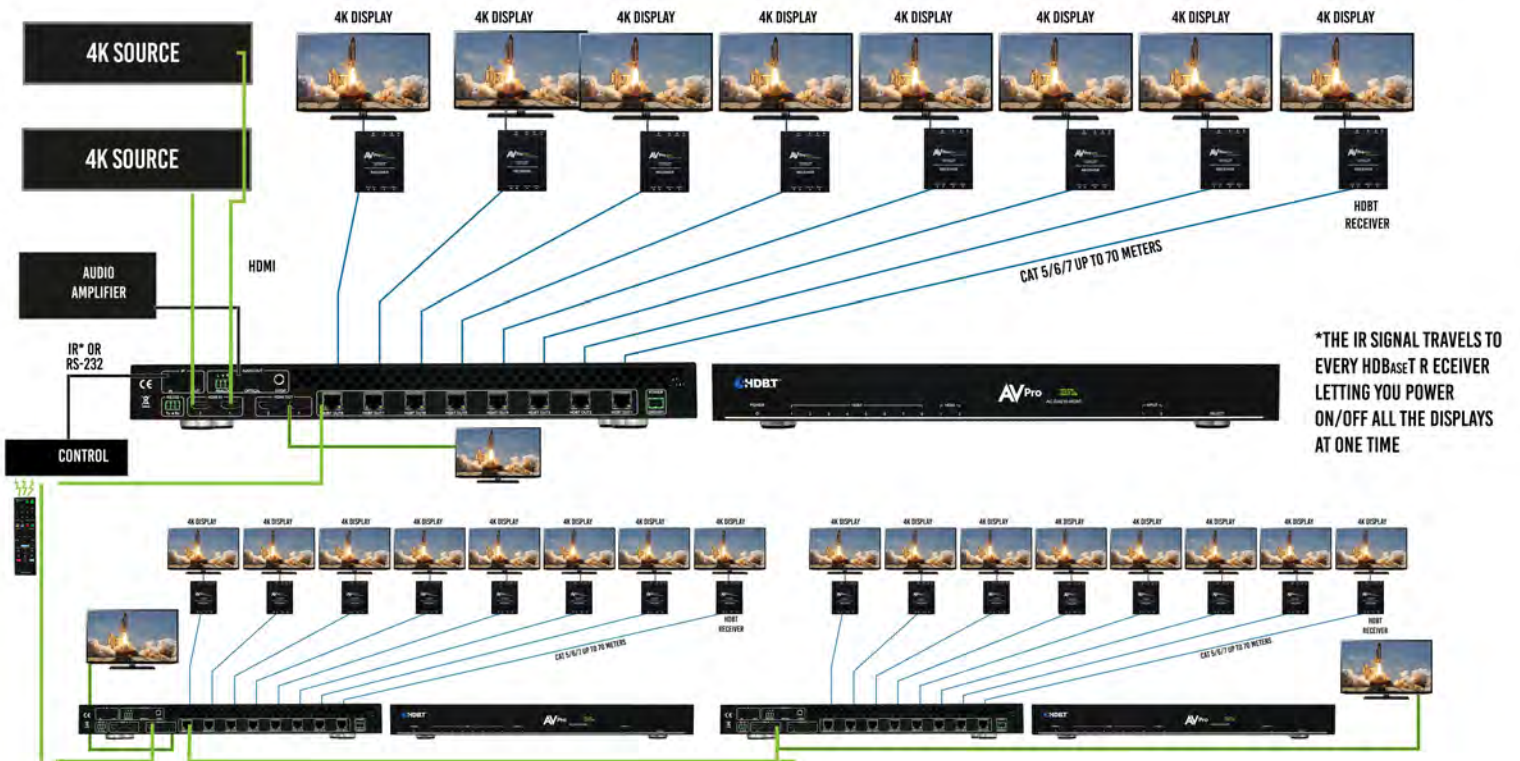
### BACK



# CONNECTION DIAGRAM



# CASCADING SIGNAGE APPLICATION



## Switching:

The AC-DA210-HDBT can be switched from the front panel by pressing the "Select" button. This switches back and forth from Input 1 and Input 2



## EDID management:

1. Pressing and holding the button for more than 3 seconds will enter an EDID management mode.
2. When in EDID management mode the HDMI out LED' s 1&2 will be flickering.
3. HDBT out LED' s 1 through 5 are used to identify the EDID setting.
4. Press the button to cycle through the available EDID' s
5. Press and hold for 3 seconds again to set the selected EDID
  - a) If all LED' s light up it is successful, and press the button once more to return to normal operating mode.
  - b) If all LED' s are flickering, the setting failed. Press the button to resume normal operating mode and try again.
6. The table below (Page 8) shows the different EDID options.



			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 0: 1080p_2ch (PCM)
0	0	0	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 1: 1080p_6ch
●	0	0	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 2: 1080p_8ch
0	●	0	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 3: 1080p_3D_2ch
●	●	0	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 4: 1080p_3D_6ch
0	0	●	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 5: 1080p_3D_8ch
●	0	●	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 6: 4k30_3D_2ch
0	●	●	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 7: 4k30_3D_6ch
●	●	●	0	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 8: 4k30_3D_8ch
0	0	0	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 9: 4k60_3D_2ch
●	0	0	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 10: 4k60_3D_6ch
0	●	0	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 11: 4k60_3D_8ch
●	●	0	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 12: USER1_EDID
0	0	●	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 13: USER2_EDID
●	0	●	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			
			<b>HDBT</b>					<b>HDMI</b>		Embedded EDID 14: USER3_EDID
0	●	●	●	0	0	0	0	●	●	
1	2	3	4	5	6	7	8			



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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
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			<b>HDBT</b>						<b>HDMI</b>																									
●	○	○	●	●	○	○	○		●	●																								
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			<b>HDBT</b>						<b>HDMI</b>																									
○	●	○	●	●	○	○	○		●	●																								
1	2	3	4	5	6	7	8																											

# Audio:

The extracted audio is always active by default, you may simply plug into any/all of the ports (Toslink, SPDIF, 2CH) and the audio will be output based on the active source. Additional audio commands can be sent by RS-232.

# IR Routing:

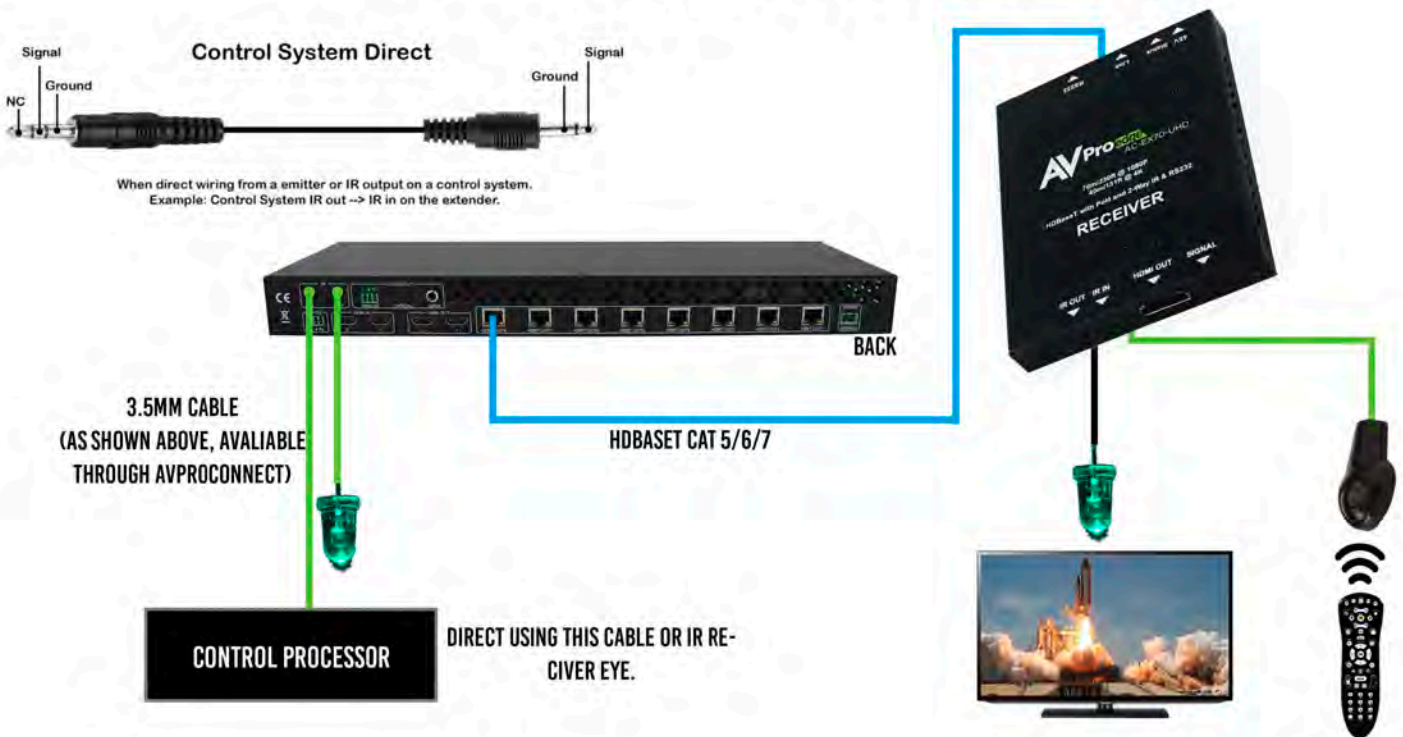
IR can be routed in three ways

1. To the remote (HDBaseT Receiver) end by inserting an IR Receiving Eye into the IR In port on the AC-DA210-HDBT.



2. Back out of the IR Out port on the AC-DA210-HDBT by placing an IR Receiving Eye in the AC-EX70-UHD Receiver's IR In port
3. Directly from a control system using a cable as designed below.

# IR CONTROL DIAGRAM





## RS-232 Control:

You may also control or configure the AC-DA210-HDBT with RS232. **RS232 setting:**

**Baudrate: 57600 Parity: None DataBit: 8 StopBit: 1**

The available commands are as follows:

= 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 RS BP xx	: Set RS232 Bypass Enable/Disable {xx=[99~99](00=Single)}	=
= GET ADDR	: Get System Address	=
= GET RS BP	: Get RS232 Bypass Status	=
= GET STA	: Get System Status	=
-----		
= Output Setup Commands:	: (Note:output number(x)=HDMI(x),x=1-8)	=
= SET OUT 0 VS Inx	: Set Output To Input x {x=[1~2]}	=
= SET OUT0 EA x	: Set External Audio Output x ON/OFF {x=[0~1](0=OFF, 1=ON)}	=
= GET OUT0 VS	: Get Output Video Route	=
= GET OUT0 EA	: Get External Audio Output Status	=
= GET OUTx EDID DATA	: Get Output x EDID Data {x=[1~10]}	=
-----		
= Input Setup Commands:	(Note:input number(x)=HDMI(x),x=1-8)	=
= SET INx EDID y	: Set Input x EDID{x=[0~8](0=ALL), y=[0~32](None:[12~14],[27~29])}	=
=     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_3D_2CH(PCM)	10:4K60Hz_3D_6CH	11:4K60Hz_3D_8CH
=     12:USER1_EDID	13:USER2_EDID	14:USER3_EDID
= SET INx EDID CY OUTy	: Copy Output y EDID To Input x(USER1 BUF) {x=[0~2](0=ALL), y=[1~10]}	=
= SET INx EDID Uy DATAz	: Write EDID To User y Buffer of Input x {x=[0~2](0=ALL), y=[1~3],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=[0~14]}	=
-----		
= IR Code Setup:		=
= SET IR SYS x,y	: Set IR System Code {xx=[00~FF],yy=[00~FF]}	=
= SET IR OUT0 INx CODE y	: Set Input x IR Control Code {x=[1-2], y=[00-FF]}	=
= GET IR SYS	: Get IR System Code	=
= GET IR OUT0 IN x CODE	: Get Input x IR Control Code {x=[0-2](0=All)}	=
-----		
= Network Setup Command:	: ( xxx=[000-255], zzzz=[0001~9999]	=
= 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	=



## ▪ Troubleshooting

- Verify Power - The LCD screen on the front of the matrix should be lit up when power is applied. Check that both power supplies are connected to the matrix and powered
- Verify Connections - Check that all cables are properly connected
- Issues with one INPUT/OUTPUT - Swap ports/cables/etc to help narrow down if the issue stays with the input/output/etc
  - Follows the device, then it may be an EDID issue. Default out of the box is a 1080p 2ch. Try another canned EDID or use the COPY FROM OUTx command to copy the connected displays EDID - Pg. 7, 8, 11, and 21
- Issues with 4k but 1080p or less is working
  - Verify all connected devices are capable of the signal you are sending

TYPE	RESOLUTION	FRAME RATE (FPS)	COLOUR COMPRESSION	DEEP COLOUR BIT DEPTH	HDR	WIDE COLOR GAMUT (BT2020)	HDMI VERSION	DATA RATE	4:4:4	4:4:4	UHD SERIES
HD	1920x1080	24	4:2:2	8 BIT	NO	NO	1.4	0.75 GBPS	Y	YES	YES
HD	1920x1080	60	4:2:2	8 BIT	NO	NO	1.4	4.45 GBPS	YES	YES	YES
HD	1920x1080	60	4:4:4	16 BIT	NO	NO	1.4	5.91 GBPS	YES	YES	YES
UHD	3840x2160	24	4:2:0	8 BIT	NO	NO	1.4	8.91 GBPS	YES	YES	YES
UHD	3840x2160	24	4:4:4	8 BIT	NO	NO	1.4	8.91 GBPS	YES	YES	YES
4K	4096x2160	24	4:4:4	8 BIT	NO	NO	1.4	8.91 GBPS	YES	YES	YES
UHD OR 4K	3840x2160	60	4:2:0	8 BIT	NO	NO	1.4/2.0	8.91 GBPS	YES	YES	YES
<b>LINE OF INNOVATION</b>											
UHD OR 4K	3840x2160	24	4:2:0	10 BIT	YES	YES	2.0(A/B)	8.91 GBPS	YES	YES	YES
UHD OR 4K	3840x2160	24	4:2:2	12 BIT	YES	YES	2.0(A/B)	11.14 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	24	4:4:4	10 BIT	YES	YES	2.0(A/B)	11.14 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	24	4:4:4	12 BIT	YES	YES	2.0(A/B)	13.37 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	60	4:2:0	10 BIT	YES	YES	2.0(A/B)	11.14 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	60	4:2:0	12 BIT	YES	YES	2.0(A/B)	13.37 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	60	4:2:2	12 BIT	YES	YES	2.0(A/B)	17.82 GBPS	YES	YES	NO
UHD OR 4K	3840x2160	60	4:4:4	8 BIT	YES	YES	2.0(A/B)	17.82 GBPS	YES	YES	NO

## Safety Instructions:

To ensure reliable operation of these products as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

1. 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.
2. Do not operate these products outside the specified temperature and humidity range given in the above specifications.
3. Ensure there is adequate ventilation to allow this product to operate efficiently.
4. Repair of the equipment should only be carried out by qualified professionals as these products contain sensitive devices that may be damaged by any mistreatment.
5. Only use these products in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.
6. Due to the weight and physical size of some of these matrix switchers, correct Manual Handling and Lifting procedures should be observed at all times while handling these products in order to minimize the risk of injury.

## After Sale Service:

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting Technical Support.
2. When calling Technical Support, the following information should be provided:
  - Product name and model number
  - Product serial number
  - Details of the fault and any conditions under which the fault occurs
3. This product has a ten year standard warranty, beginning from the date of purchase as stated on the sales invoice. Online registration of this product is required to activate the full ten year extended warranty. For full details please refer to our Terms and Conditions.
4. Product warranty is automatically void under any of the following conditions:
  - The product is already outside of its warranty period
  - Damage to the product due to incorrect usage or storage
  - Damage caused by unauthorized repairs
  - Damage caused by mistreatment of the product
5. Please direct any questions or problems you may have to your local dealer before contacting AVProEdge



## ▪ 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.







Thank you for choosing AVProEdge!

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



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