

USER MANUAL

AC-MX88-AUHD-NSFS

8X8 HDMI[®] HIGH-DEFINITION MULTIMEDIA INTERFACE MATRIX SWITCH

NSFS

NO SCALING

FAST SWITCHING

18 GBPS 4K60(4:4:4)
8 HDMI OUTPUTS
8 HDMI INPUTS



Introduction:

The AC-MX88-AUHD-NSFS is a true 18Gbps 4K60 (4:4:4) 8x8 HDMI matrix switch. Supporting HDMI 2.0(a/b), HDCP 2.2, up to 4K video resolution, and up to 18 Gbps bandwidth. This switch allows any source (Blu-ray, UHD Blu-ray, satellite receiver, game consoles, PCs, etc ...) to be shown on any of the connected displays. This matrix equalizes and amplifies the output to ensure the HDMI signal can be transmitted through long HDMI cables without loss of quality.

This matrix was built with switching speed in mind. With the introduction of high bandwidth 4K, switching times increase because of all the added data compared to legacy resolutions like 720p or 1080i/p. In this unit we have removed scaling control and audio delay control in order to give the integrator the fastest possible switching time in a 18Gbps switch. Welcome to the NSFS.

This is an ideal solution for digital entertainment centers, HDTV retail, show sites, data centers, schools, conference and training centers and more!

Features:

- HDMI 2.0 (a/b)
- 4K60 4:4:4 Support
- Full HDR Support (HDR 10 & 12 Bit)
- Dolby Vision, HDR10+ and HLG Support
- HDCP 2.2 (and all earlier versions supported)
- Advanced EDID Management
- IR, RS-232 and LAN Control Options
- Audio De-Embedding via SPIDF & 3.5mm jack
- Driver Support for Crestron, C4, RTI, ELAN and more!!!

Easy to use:

- Install in seconds
- Feature rich
- Powerful EDID management
- Front Panel Control
- IR Remote
- IR & RS-232 Control
- LAN Control

In The Box:

- AC-MX88-AUHD-NSFS (Matrix Switch)
- IR Remote Control
- IR Extension Cable
- 12V/4A Locking Power Supply

Quick Installation:

1. Connect the HDMI input sources (Blu-ray, Set Top Box, etc...) to the AC-MX88-AUHD-NSFS.
2. Connect the HDMI output devices (AVR, Display, Distribution Amplifier, Extender) to the AC-MX88-AUHD-NSFS.
3. Power on the sources.
4. Connect the power supply into the AC-MX88-AUHD-NSFS.
5. Turn on output devices/displays.
6. Use the front panel controls, supplied IR remote or free PC software to control the switch.

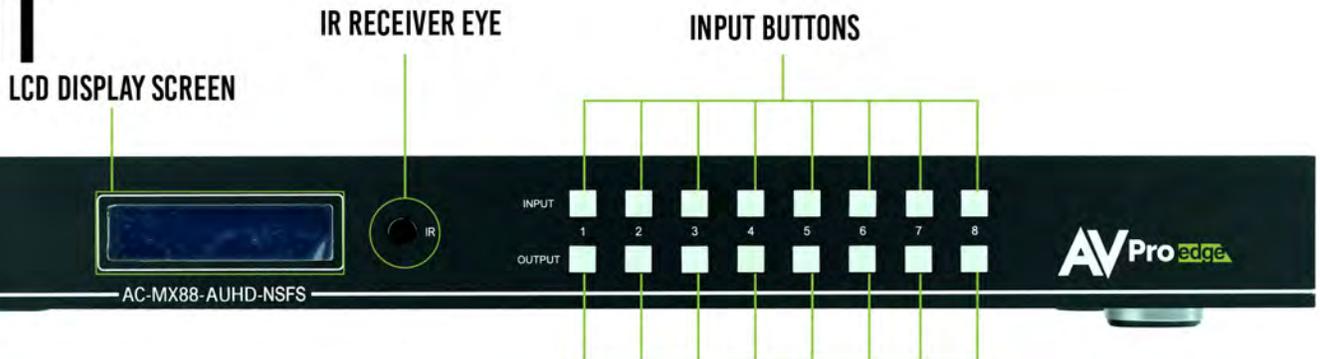
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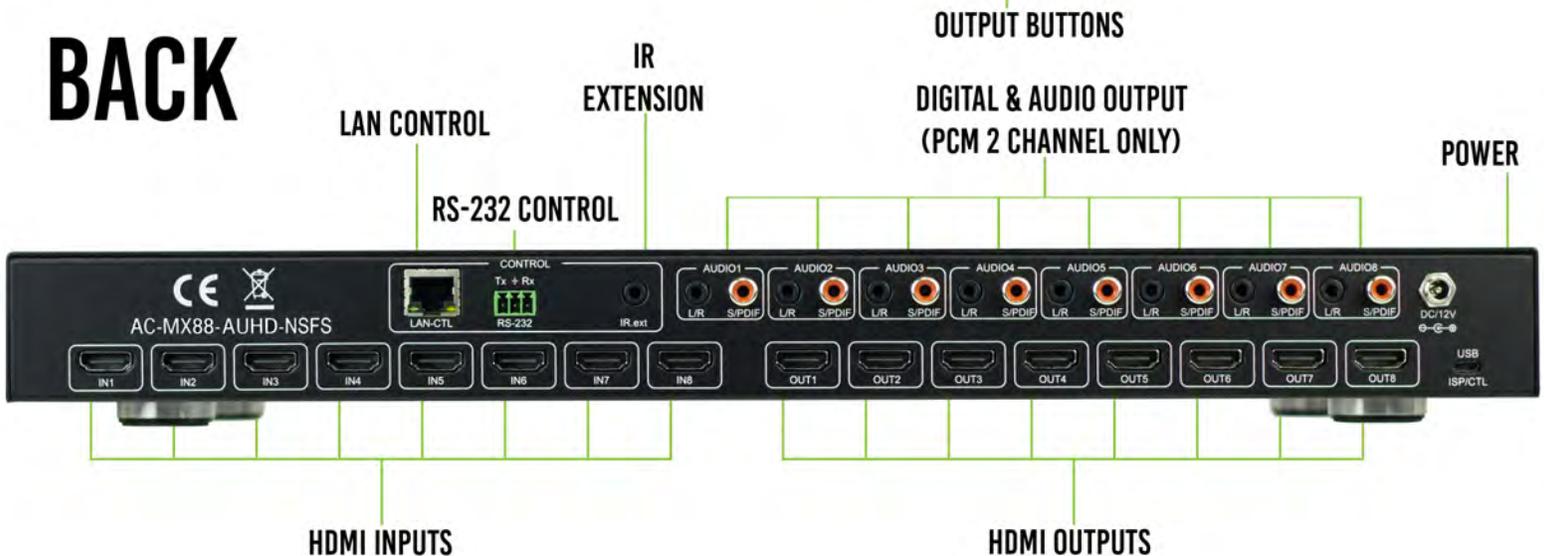
Device Overview:

- Definition - Matrix switches provide the ability to route any input to any output or to multiple outputs at any time. Depending on the model, a matrix switch can route HD, UHD or AUHD content in this manner. Additionally, since most venues have both, audio zones and video zones, the requirement to breakout or strip off the audio is often necessary and has become almost a standard feature on most matrix switches.
- Control – Matrix switches are generally controlled via a third-party controller (like Control 4, RTI, Crestron, etc...). Many integrators want ready-made drivers for their control system in order to make programming and deployment easier.
- Matrix Switches are widely used in both, Commercial and Residential Applications.

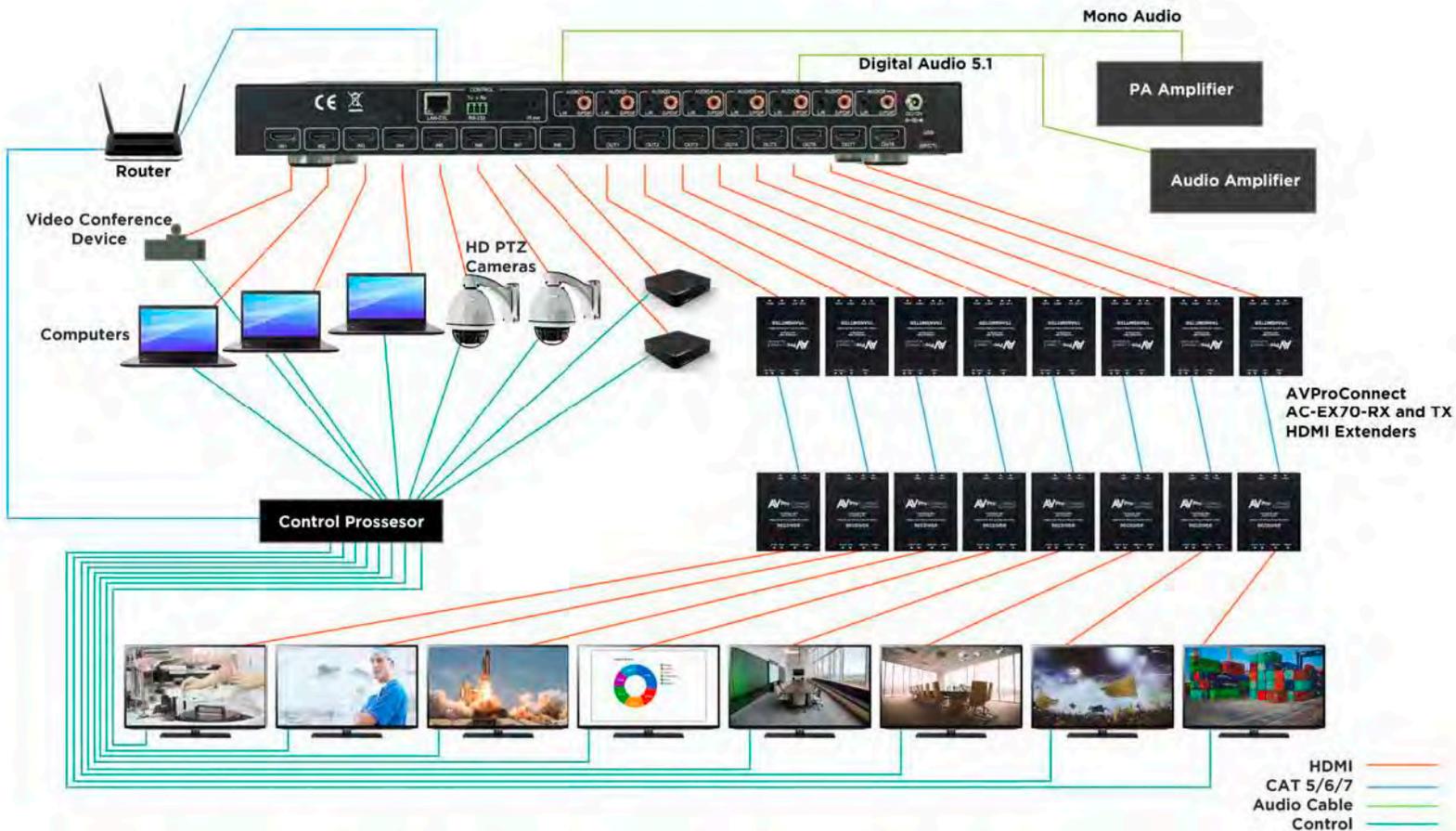
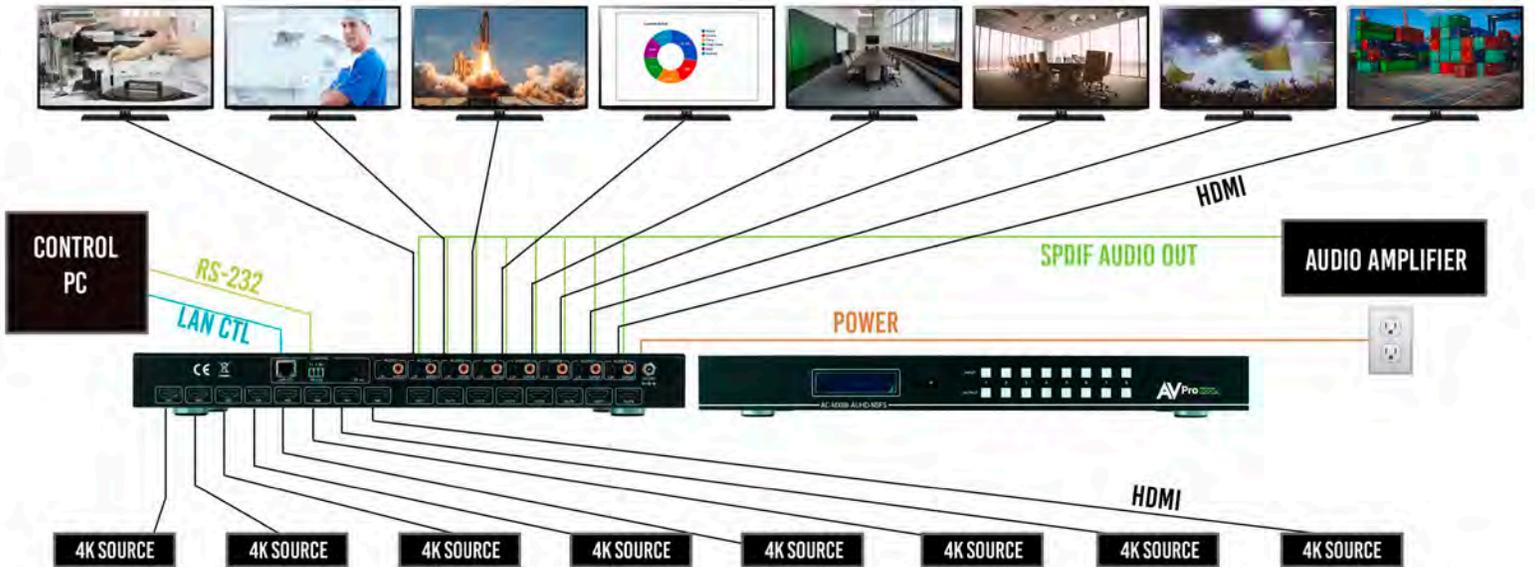
FRONT



BACK



CONNECTION DIAGRAM



Full List of Quick Commands From Front Panel:

Parameter	How To	Options
Switching Control	<ol style="list-style-type: none"> 1. Press the OUTPUT button you want to switch 2. Press the desired INPUT button 	
EDID Setup	<ol style="list-style-type: none"> 1. Press and hold (3 sec) the INPUT button of the source you want to set EDID for 2. Use the corresponding INPUT/OUTPUT buttons as UP/DOWN to select EDID 3. Press and hold (3 sec) the INPUT button again to set EDID 	See PAGE 6, 10, 14 in the manual for list of available EDIDs
Toggle DHCP Mode	<ol style="list-style-type: none"> 1. Press and hold (3 sec) INPUT 1 & INPUT 4 together 	Toggles DHCP OFF/ON NOTE: Default mode if OFF, Default IP Address is 192.168.1.239
View Network Settings	<ol style="list-style-type: none"> 1. Press and hold (3 sec) INPUT 3 & INPUT 4 together 	The screen will flash the following: - Device IP - Host IP - Subnet Mask -MAC Address
View Firmware Version	<ol style="list-style-type: none"> 1. Press and hold (3 sec) INPUT 2 & INPUT 4 together 	

Front Panel Control

Switching:

The AC-MX88-AUHD-NSFS can be switched from the front panel by selecting the OUTPUT button first and then selecting the INPUT button:

1. Press the button (1 through 8) on the bottom row that corresponds with the OUTPUT (Display, or Sink Device) you would like to send to a source.
2. Once pressed, the switch will illuminate the OUTPUT button that you have selected, along with the INPUT row (as pictured), indicating that it is ready for you to select the INPUT.
3. Select the desired INPUT.

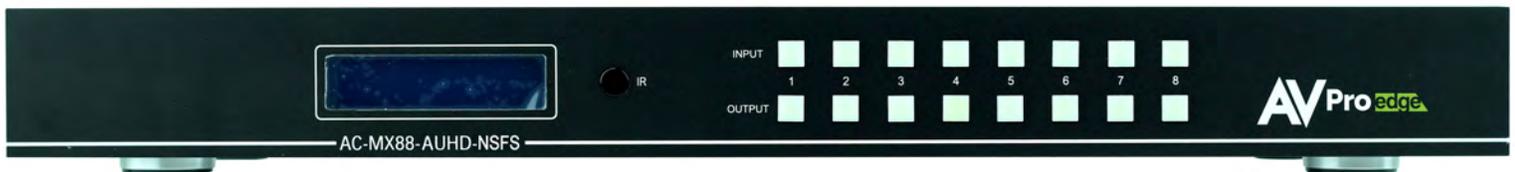


Figure 1 – Switching with the front panel controls. NOTE: Select the OUTPUT and the INPUT

EDID Management:

This matrix has 29 factory defined EDID settings. It also has 3 user defined EDID memories. The user EDID memories are independent to each input and can be set differently. The user defined EDID can be uploaded using the free PC Control software or RS-232. In addition, you can choose to read the EDID from the desired output and that read EDID will automatically store and overwrite the EDID in "USER EDID 1". We recommend uploading custom EDID settings to memory 2 or 3.

By default the matrix is set to a 1080P EDID, this is to maximize plug and play capability. When using 4K sources, you will want to define a 4K EDID on that input (or read from the display).

To Change the EDID setting:

1. Press and hold the INPUT you want to change for 3 seconds
2. Now "press" the desired INPUT/OUTPUT (Example: Setting EDID for INPUT3, use IN 3 & OUT 3) to toggle through the available EDID options
3. Once you are on the EDID you want to select, press and hold the INPUT button again for 3 seconds. The LCD Screen will say "Please Wait", then "OK" once the EDID is set.

These are the pre-defined EDID settings that you can toggle through:

0: 1080P_2CH(PCM)	17: 1080P_8CH_HDR
1: 1080P_6CH	18: 1080P_3D_2CH(PCM)_HDR
2: 1080P_8CH	19: 1080P_3D_6CH_HDR
3: 1080P_3D_2CH(PCM)	20: 1080P_3D_8CH_HDR
4: 1080P_3D_6CH	21: 4K30Hz_3D_2CH(PCM)_HDR
5: 1080P_3D_8CH	22: 4K30Hz_3D_6CH_HDR
6: 4K30Hz_3D_2CH(PCM)	23: 4K30Hz_3D_8CH_HDR
7: 4K30HZ_3D_6CH	24: 4K60Hz(Y420)_3D_2CH(PCM)_HDR
8: 4K30HZ_3D_8CH	25: 4K60Hz(Y420)_3D_6CH_HDR
9: 4K60Hz(Y420)_3D_2CH(PCM)	26: 4K60Hz(Y420)_3D_8CH_HDR
10: 4K60Hz(Y420)_3D_6CH	27: 4K60Hz_3D_2CH(PCM)_HDR
11: 4K60Hz(Y420)_3D_8CH	28: 4K60Hz_3D_6CH_HDR
12: 4K60HZ_3D_2CH	29: 4K60Hz_3D_8CH_HDR
13: 4K60HZ_3D_6CH	30: USER_EDID_1
14: 4K60HZ_3D_8CH	31: USER_EDID_2
15: 1080P_2CH(PCM)_HDR	32: USER_EDID_3
16: 1080P_6CH_HDR	

EDID Management Cont:

The first 29 EDID settings cannot be altered. The three USER EDID settings are programmed using RS-232, web interface, or the free PC Software. However, you can read an EDID from any output and it will automatically store in USER EDID 1. Remember, each INPUT has an independent EDID setting and you may need to program each one.

To read and set an EDID to a specified input the steps are the same as on PAGE 6. The only difference is that when you see a screen similar to FIGURE 5, you press and hold the INPUT button again for 3 seconds and this AUTOMATICALLY reads, stores and sets the EDID for that INPUT.



Figure 5 ~ Read EDID Screen

Display IP Data:

Press and hold INPUT 3 and INPUT 4 at the same time for three seconds to display the current IP settings. This screen will change every 3 seconds showing additional settings (host, net mask, router IP). NOTE: This screen always starts with the current IP address of the matrix:



In order to prevent potential IP problems, most IP settings have to be managed in the Free PC Software or using RS-232 commands.

NOTE: The default IP address is 192.168.001.239 (As pictured above)

You can enable/disable DHCP mode directly from the front panel. When DHCP is enabled it will automatically gather an IP address from the network and it will be discoverable on said network. You can now view the assigned IP address by following the steps above. To toggle DHCP, press and hold INPUT 1 and INPUT 4 at the same time for three seconds. You will see one of the two options shown below



Web Interface:Switching

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

Sense SwitchAudio SettingEDID Manage

Sense Switch

OUT1	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT2	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT3	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT4	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT5	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT6	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT7	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT8	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
ALL	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8

Web Interface: Audio Settings

Audio Setting
EDID Manage
System Setting

Ex-Audio Matrix Mode

Bind To Output
Bind To Input
Matrix

Audio Matrix

OUT1	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT2	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT3	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT4	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT5	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT6	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT7	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
OUT8	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
ALL	IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8

Audio Status

OUT1	ON	OFF
OUT2	ON	OFF
OUT3	ON	OFF
OUT4	ON	OFF
OUT5	ON	OFF
OUT6	ON	OFF
OUT7	ON	OFF
OUT8	ON	OFF

Audio Status:

This allows the user to turn ON and OFF the extracted audio output. When this is set to OFF the audio is muted from the extracted port.

Audio Matrix:

This allows the user to route the audio in a matrix fashion for the extracted audio ports.

NOTE: The Audio Matrix Function only works if "MATRIX" is selected on the right (See next explanation).

Ex-Audio Matrix Mode:

This allows the user to set a binded audio setting or set the extracted audio to Matrix. The options are:

- **Bind to Input** - The extracted audio port is always fixed to a specific input. For example, when a source is plugged into INPUT 1, OUTPUT 1 will always have the audio signal from INPUT 1. This will happen regardless of which input is selected for OUTPUT 1
- **Bind to Output (Default)** - The extracted audio always follows the corresponding HDMI output. For example, in this mode AUDIO OUT 1 and HDMI OUT 1 are the same (Switched Together).exa
- **Matrix** - You can set to "Matrix" and it will allow routing of the audio as a separate, stand-alone "Matrix". This allows use of the "Audio Matrix" buttons pictured above.

Web Interface: EDID Management

Audio Setting
EDID Manage

EDID Manage

<p>IN1 1080P 2CH <input type="button" value="Apply"/></p> <p>IN3 1080P 2CH <input type="button" value="Apply"/></p> <p>IN5 1080P 2CH <input type="button" value="Apply"/></p> <p>IN7 1080P 2CH <input type="button" value="Apply"/></p>	<p>IN2 1080P 2CH <input type="button" value="Apply"/></p> <p>IN4 1080P 2CH <input type="button" value="Apply"/></p> <p>IN6 1080P 2CH <input type="button" value="Apply"/></p> <p>IN8 1080P 2CH <input type="button" value="Apply"/></p>
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Using the built-in EDID manager, a multitude of EDID's can be set for each input, and each input can be assigned a different EDID. This should be used to optimize sources or to manage infrastructure.

The EDID options are:

- | | |
|-----------------------------|----------------------------------|
| 0: 1080P_2CH(PCM) | 15: 1080P_2CH(PCM)_HDR |
| 1: 1080P_6CH | 16: 1080P_6CH_HDR |
| 2: 1080P_8CH | 17: 1080P_8CH_HDR |
| 3: 1080P_3D_2CH(PCM) | 18: 1080P_3D_2CH(PCM)_HDR |
| 4: 1080P_3D_6CH | 19: 1080P_3D_6CH_HDR |
| 5: 1080P_3D_8CH | 20: 1080P_3D_8CH_HDR |
| 6: 4K30Hz_3D_2CH(PCM) | 21: 4K30Hz_3D_2CH(PCM)_HDR |
| 7: 4K30HZ_3D_6CH | 22: 4K30Hz_3D_6CH_HDR |
| 8: 4K30HZ_3D_8CH | 23: 4K30Hz_3D_8CH_HDR |
| 9: 4K60Hz(Y420)_3D_2CH(PCM) | 24: 4K60Hz(Y420)_3D_2CH(PCM)_HDR |
| 10: 4K60Hz(Y420)_3D_6CH | 25: 4K60Hz(Y420)_3D_6CH_HDR |
| 11: 4K60Hz(Y420)_3D_8CH | 26: 4K60Hz(Y420)_3D_8CH_HDR |
| 12: 4K60HZ_3D_2CH | 27: 4K60Hz_3D_2CH(PCM)_HDR |
| 13: 4K60HZ_3D_6CH | 28: 4K60Hz_3D_6CH_HDR |
| 14: 4K60HZ_3D_8CH | 29: 4K60Hz_3D_8CH_HDR |
| 15: 1080P_2CH(PCM)_HDR | 30: USER_EDID_1 |
| 16: 1080P_6CH_HDR | 31: USER_EDID_2 |
| | 32: USER_EDID_3 |

*You can copy the EDID from any output and apply it to any input. Select "Copy EDID from Output *x" (x=1-8). 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" once the "Apply" button is pressed.

Web Interface: System Settings

EDID Manage
System Setting

IP Setting

MAC Address

Host IP Address

Subnet Mask

Router IP Address

TCP Port

Port Alias Setting

OUT1	<input type="text" value="OUT1"/>	IN1	<input type="text" value="IN1"/>
OUT2	<input type="text" value="OUT2"/>	IN2	<input type="text" value="IN2"/>
OUT3	<input type="text" value="OUT3"/>	IN3	<input type="text" value="IN3"/>
OUT4	<input type="text" value="OUT4"/>	IN4	<input type="text" value="IN4"/>
OUT5	<input type="text" value="OUT5"/>	IN5	<input type="text" value="IN5"/>
OUT6	<input type="text" value="OUT6"/>	IN6	<input type="text" value="IN6"/>
OUT7	<input type="text" value="OUT7"/>	IN7	<input type="text" value="IN7"/>
OUT8	<input type="text" value="OUT8"/>	IN8	<input type="text" value="IN8"/>

IP Settings:

Set network settings such as:

Port Alias Settings:

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

IR Remote Control:

The HDMI routing of the matrix can also be controlled

by using the IR remote supplied with the product.

The left arrow button decrements to the next lower input port, and the right arrow increments to the next input port.

Additionally, the supplied IR Extension Cable can provide a different receiver position. Just plug into the IR Extension Socket on the back of the matrix and place the receiver in a more convenient location.



Press to decrease or increase the input channel number selection for each output channel separately

Figure 2 ~ AC-MX88-AUHD-NSFS IR Remote

Press to decrease or increase the input channel number selection for all output channels together



Figure 3 ~ AC-MX88-AUHD-NSFS IR Controls



Figure 4 ~ IR Extension Cable

RS-232 and TCP/IP Commands:

The AC-MX88-AUHD-NSFS 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.

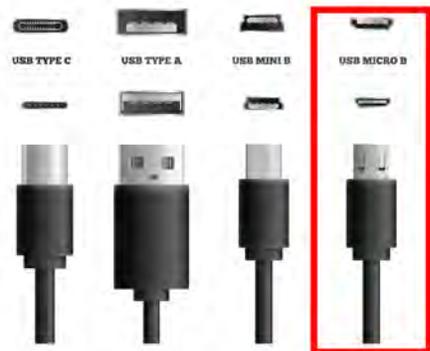
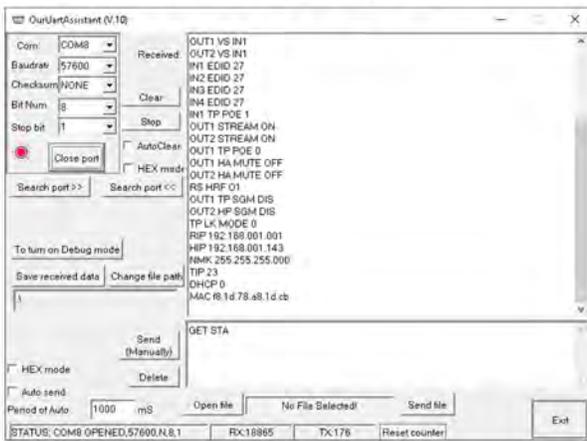
For TCP/IP control commands use Telnet Port 23.

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 below.

USB CONTROL FOR AVPRO EDGE



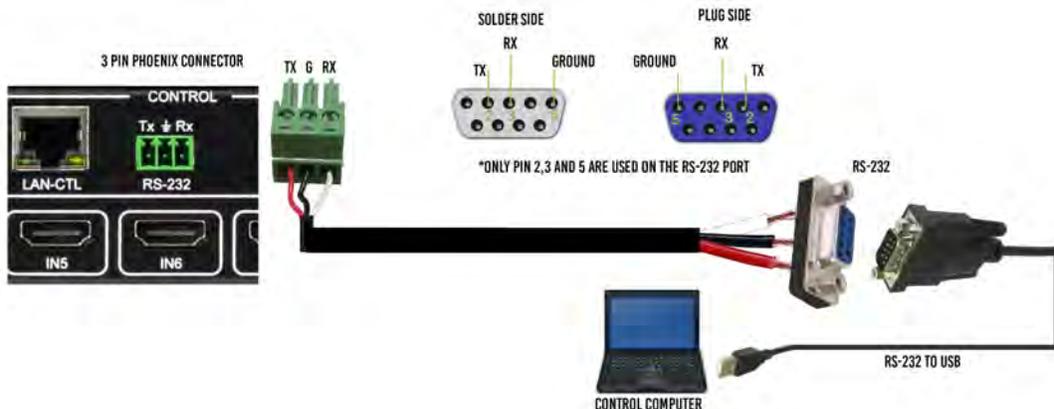
WWW.AVPROEDGE.COM/DRIVERS

OTHER TOOLS & DRIVERS

MyUART Serial Communication: Used to send direct serial commands to our products.

Universal FTDI USB-to-Serial Driver: Used with STM-G/SDX-A/B/Fox 8 Board and several USB-to-Serial converters supplied by AVProEdge.

RS-232 CABLE FOR AVPRO EDGE



RS-232 and TCP/IP Commands:

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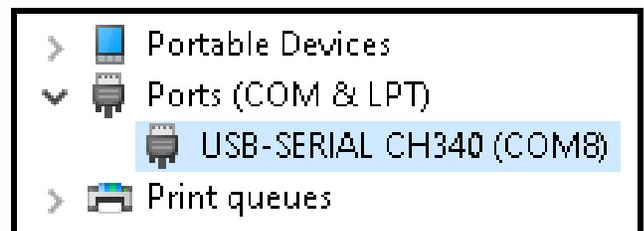
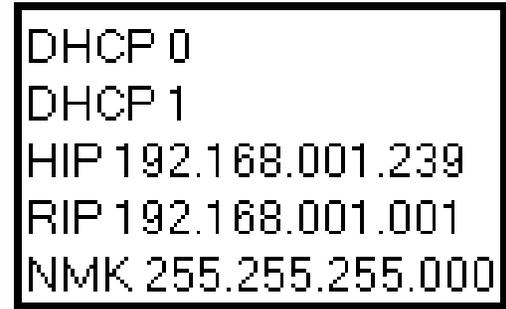
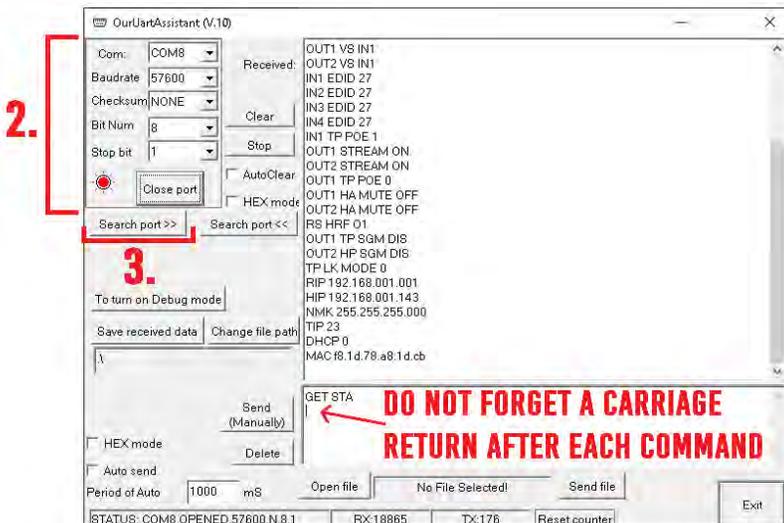
57600,n,8,1 (baud: 57600, no parity, 8 data bits and 1 stop bit) with no handshaking.

Please add a return (Enter key) after each command when using direct commands. The unified command list (ASCII) is listed on the next page.



Command Example: DHCP and setting the IP Address

1. Connect your computer to one of the control ports (Micro USB/3pin Terminal)
2. Open up MyUart and verify the correct settings
 - a. Baudrate: 57600, no parity, 8 data bits and 1 stop bit) with no handshaking.
3. On MyUart click Search Port>> (you will see a red indicator once connected)
 - a. You can verify the COM port by using Windows Device Manger. Both USB and 3pin connections should show up as a COM#.
4. Send "GET DHCP" with a carriage return (no " " and hit Enter/Return on keyboard).
 - a. Default is OFF so the return message should be "DHCP 0" (0=Off, 1=On)
5. Send "SET DHCP 1", the return message should read "DHCP 1"
 - a. This will also return the current IP Settings. If there is no connection it will reply with the Default Settings.
6. You can now connect to the WebUI by typing in the HIP address into a web browser. There you can alter the IP address of the Matrix to one of your choosing.
7. You can also set the address of the matrix by sending the following command
 - a. "SET HIP xxx.xxx.xxx.xxx" (SET HIP 192.168.1.143)
8. Once configured it is recommended to turn DHCP back off so the settings are set to Static and will not change (this can also be done from the WebUI).
 - a. "SET DHCP 0"
9. You can verify the settings by getting the status of the matrix
 - a. "GET STA"



RS-232andTCP/IPCommands:

Command	Action	
H	: Help	
STA	: Show Global System Status	
SET RST	: Reset to Factory Defaults	
SET RBT	: System Reset to Reboot	
SET ADDR xx	: Set System Address to xx {xx=[00-99](00=Single)}	
SET EMG MODE EN/DIS	: Set Emergency Mode Enable/Disable	
SET LCD ON Tx	: Set LCD Remain On Time{x=[0~3](0=Always ON,1=15,2=30,3=60Sec)}	
SET KEY LOCK ON/OFF	: Set Key Lock On/Off	
GET ADDR	: Get System Address	
GET EMG MODE	: Get Emergency Mode Status	
GET STA	: Get System System Status	
GET INx SIG STA	: Get Input x Signal Status{x=[0~16](0=ALL)}	
GET LCD ON T	: Get LCD Remain On Time	
GET KEY LOCK	: Get Key Lock Status	
Output Setup Commands:	:(Note:output number(x)=HDMI(x),x=1-8)	
SET OUTx VS Iny	: Set Output x To Input y{x=[0-9](0=ALL), y=[1-10](10=Multiview)}	
SET INx TMDS ON/OFF	: Set Input x Port Power Status ON/OFF{x=[0~8](0=ALL)}	
SET OUTx EXA EN/DIS	: Set Ex-Audio Output Enable/Disable{x=[0~8](0=ALL)}	
SET EXAMX MODEx	: Set Ex-Audio Matrix Mode {x=[0~2](0=Bind To Output,1=Bind To Input,2=Matrix)}	
SET OUTx AS INy	: Set Ex-Audio Output x To Input y{x=[0~8](0=ALL), y=[1~8]}	
SET OUTx STREAM ON/OFF	: Set Output x Stream ON/OFF{x=[0~8](0=ALL)}	
GET OUTx VS	: Get Output x Video Route{x=[0~8](0=ALL)}	
GET INx TMDS	: Get Inputx Port Power Status ON/OFF{x=[0~8](0=ALL)}	
GET INx VID FMT INF	: Get Input x Video Format Info{x=[0~8](0=ALL)}	
GET OUTx EXA	: Get Ex-Audio Output Enable/Disable Status{x=[0~8](0=ALL)}	
GET OUTx EDID DATA	: Get Output x EDID DATA{x=[1~8]}	
GET EXAMX MODE	: Get Ex-Audio Matrix Mode	
GET OUTx AS IN	: Get Output x Ex-Audio Route{x=[0~8](0=ALL)}	
GET OUTx STREAM	: Get Output x Stream ON/OFF Status{x=[0~8](0=ALL)}	
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]}	
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_6CH_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	31:USER2_EDID	32:USER3_EDID
SET INx EDID CY OUTy	: Copy Output y EDID To Input x(USER1 BUF) {x=[0~8](0=ALL), y=[1~8]}	
SET INx EDID Uy DATAz	: Write EDID To User y Buffer of Input x {x=[0~8](0=ALL), y=[1~3],z=[EDID Data]}	
GET INx EDID	: Get Input x EDID Index {x=[0~8](0=All)}	
GET INx EDID y DATA	: Get Input x EDID y Data {x=[1~8],y=[0~32]}	
Preset Group Command:	(Note:Output number(x)=HDMI(x),x=1-8)	
SET VS PSMx	: Set Preset Mode x {x=[1~10]}	
SET VS SSMx	: Set Current State to Preset Mode x {x=[1~10]}	
SET GUP PSMx OUT z1.z2.z3.z4.z5.z6.z7.z8	: Set Preset Mode Group x All Output To Input{x=[1~10],z1-z8[Input]}	
GET VS PSMx	: Get Preset Mode x Status{x=[1~10]}	
GET GUP PSMx OUT	: Get Preset Mode Group x All Output Status {x=[0~10](0=ALL)}	
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 Data Code {x=[1~8],y=[1~8],zz=[00~FFH]}	
GET IR SYS	: Get IR System Code	
GET IR OUTx INy CODE	: Get IR Data Code {x=[1~8](0=All),y=[1~8]}	
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	

Specifications:

VIDEO:	
VIDEO RESOLUTIONS	UP TO 4K 60HZ 4:2:0, 4K 30HZ 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 (24/30 FRAMES), 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
AUDIO FORMATS SUPPORTED EXTRACTED (COAX)	PCM 2 CH, LPCM 6CH, DOLBY DIGITAL, DTS
AUDIO FORMATS SUPPORTED EXTRACTED (3.5MM STEREO)	PCM 2 CH (NO DOWNMIX)
AUDIO EXTRACTION LOCATION	BIND TO INPUT, BIND TO OUTPUT OR MATRIX (INDEPENDENT)
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 HDMI	9 GBPS
HDCP	HDCP 2.2 AND EARLIER
CONTROL:	
PORTS	LAN, RS232, IR, MICRO USB
DRIVERS	C4, RTI, ELAN, CRESTRON, URC (FOR MORE - SEE DRIVERS PAGE)
LAN WEBS	YES
PORTS:	
HDMI	TYPE A
LAN	RJ45 W/ WEB INTERFACE/CONTROL
AUDIO (EXTRACTED DIGITAL)	SPDIF-COAX
AUDIO (EXTRACTED 2CH)	3.5MM STEREO (3 CONDUCTOR)
IR RX	3.5MM STEREO (3 CONDUCTOR)
RS232	3 PIN TERMINAL BLOCK
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)	92 WATTS MAX
POWER SUPPLY - MATRIX	INPUT: AC 100-240V ~ 50/60HZ OUTPUT: DC 48V 3A
DIMENSIONS:	
DIMENSIONS (UNIT ONLY HEIGHT/DEPTH/WIDTH)	MM: 44.45 X 225.42 X 438.15 INCH: 1.75 X 8.75 X 17.25
DIMENSIONS (PACKAGED HEIGHT/DEPTH/WIDTH)	MM: 88.9 X 336.55 X 495.3 INCH: 3.5 X 13.25 X 19.5
RACK UNITS	1 UNIT
WEIGHT (UNIT)	6.88 LBS/3.12 KG
WEIGHT (PACKAGED)	9.15 LBS/4.15 KG
*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS & DIMENSIONS ARE APPROXIMATE	

NOTE: HDR (High Dynamic Range) is supported on these matrix switchers. you mus read EDID from and HDR capable display and store it to to the input where the HDR source resides.

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.

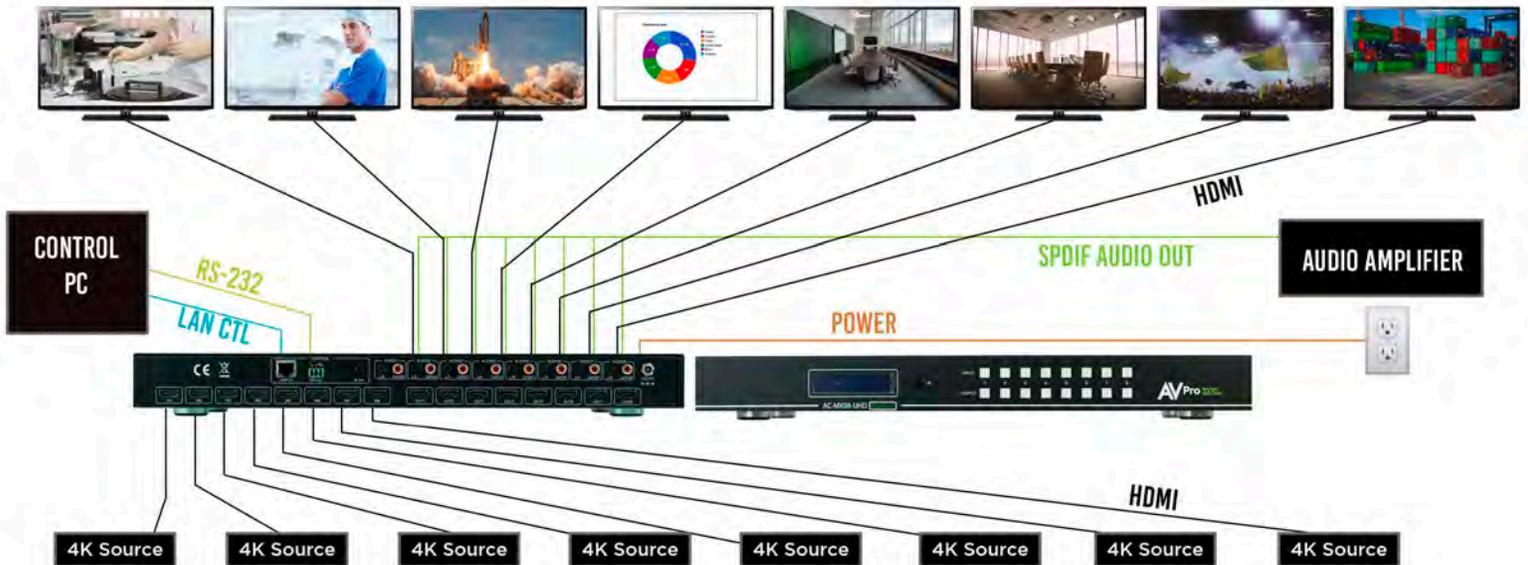
After Sale Service:

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 two 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 three 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 unauthorised 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

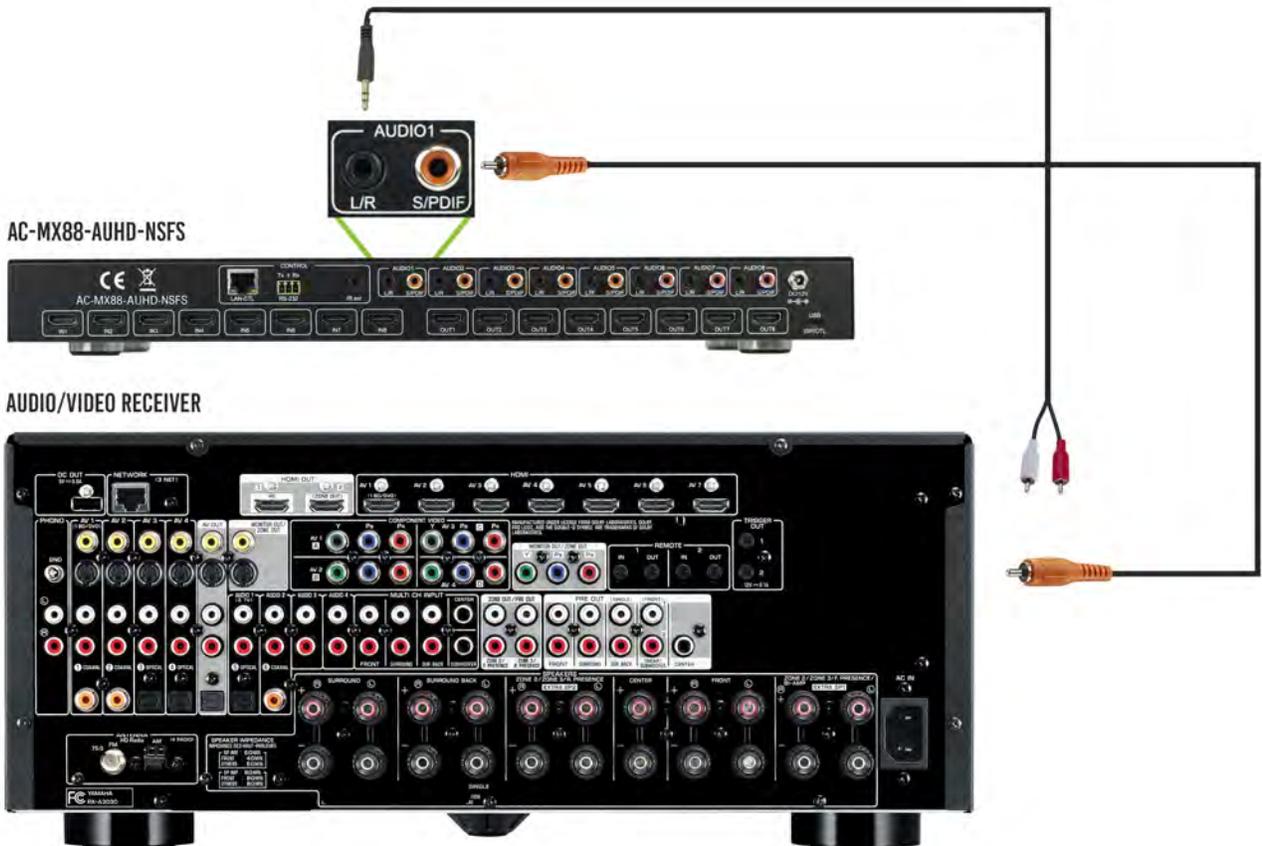


Application Diagram:

CONNECTION DIAGRAM



Audio De-Embedding Diagram



▪ 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	AUHD SERIES	444 SERIES	UHD SERIES
HD	1920x1080	24	4:2:2	8 BIT	NO	NO	1.4	0.75 GBPS	YES	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
LINE OF INNOVATION											
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

▪ 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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