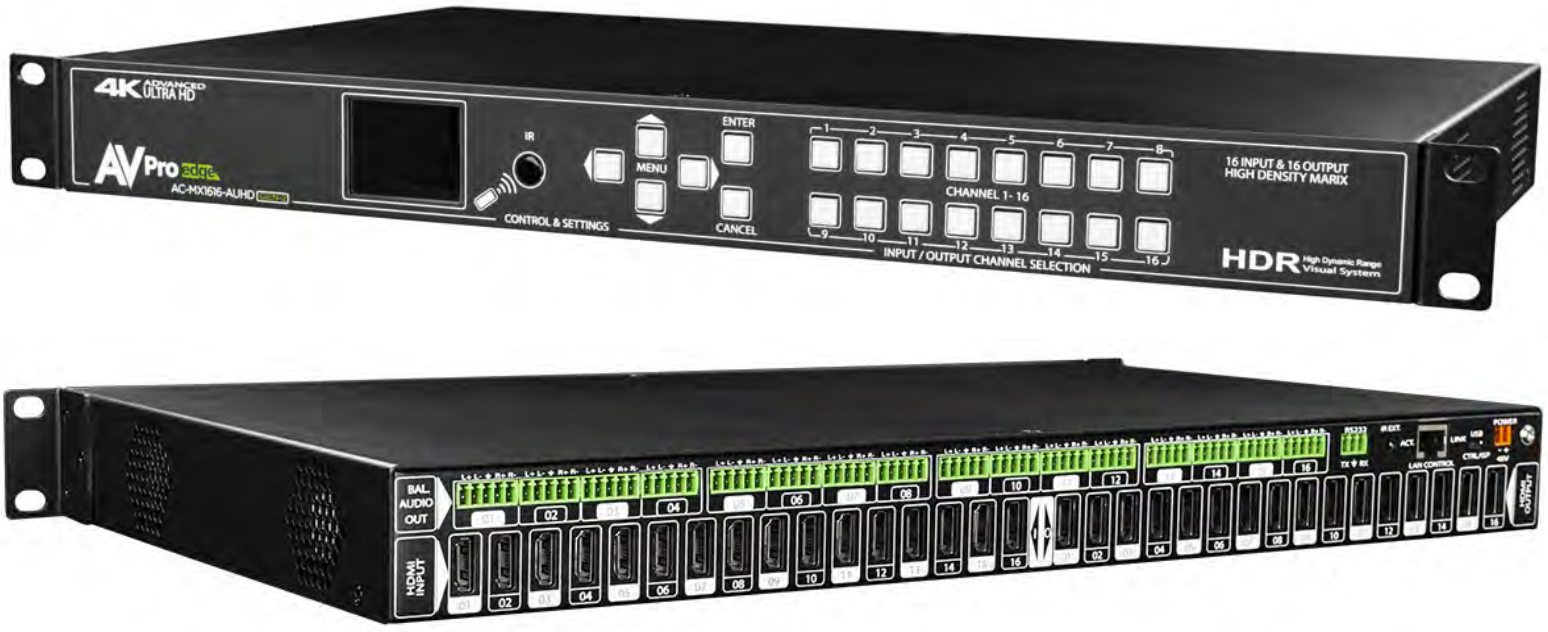
AC-MX1616-AUHD-GEN2

16 Port HDMI Matrix Switch



The AC-MX1616-AUHD-GEN2 is a true high bandwidth powerhouse. Supporting the full HDMI 2.0a/b specification and supporting every flavor of HDR, this matrix will ensure you can get the most out of any system. This unit supports uncompressed HDR formats Including HDR, HDR10, HDR10+, Dolby Vision, HLG, BBC and NHK. All of them are supported in up to 4K 60Hz and up to 12 Bit Deep Color. All color space compression is compatible.

Our unique design has allowed us to improve high bandwidth switching speeds. Average speeds of less than 3 seconds – this is an industry best for this advanced level of actual uncompressed, high bandwidth w/ HDR switching. Maximum compatibility and speed improve the customer experience immensely.

The sleek, low-profile and high-density design make for a sleek machine that saves you valuable space in the rack room. This combined with a OLED setup screen on the front that makes setup and management a breeze will make this a staple in your large demanding installations!

Features:

- HDMI 2.0(a/b)
- 18Gbps Bandwidth Support
- 4K60 4:4:4 Support
- Ultimate HDR Support (HDR 10 & 12 Bit)
- Dolby Vision, HDR10+ and HLG Support
- HDCP 2.2 (and all earlier versions supported)
- Simple setup with front panel control screen
- WebOS for simple connectivity and control/ management
- Ultra-Low Profile (1U)
- Fast Switching
- Advanced EDID Management
- IR, RS-232 and LAN Control Options
- Digital Coax Audio Out (6CH PCM, DD, DTS)
- Driver Support for Crestron, C4, RTI, ELAN and more!!!
- Extracted Audio Now Has 3 Operating Modes. Bound to Input, Bound to Output, or Independent Matrix

Easy to use:

- Feature rich
- Fast Switching
- Setup screen
- IR Remote
- IR & RS-232 Control
- LAN Control

In The Box:

- AC-MX1616-AUHD-GEN2 Matrix
- IR Remote Control
- IR Extension Cable
- 12V/5A Power Supply
- Rack Ears
- 5 pin terminal connectors for extracted Audio

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 (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 DIGTAL, 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 6 CH, LPCM 7 CH, DOLBY DIGITAL, DOLBY DIGITAL PLUS, DTS-HD MASTER AUDIO
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	18 GBPS
HDCP	HDCP 2.2 AND EARLIER
CONTROL:	
PORTS	LAN, RS232, IR, MICR USB
DRIVERS	C4, RTI, ELAN, CRESTRON, URC (FOR MORE - SEE DRIVERS PAGE)
PC SOFTWARE	YES
LAN WEBOS	YES
PORTS:	
HDMI	TYPE A
LAN	RJ45 W/ WEB INTERFACE/CONTROL
AUDIO (EXTRACTED DIGITAL)	5 PIN TERMINAL BLOCK
IR RX	3.5MM STEREO (3 CONDUCTOR)
RS232	3 PIN TERMINAL BLOCK
USB	MICRO - FOR UART COMMUNICATION/CONTROL
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: 50.8 X 260.35 X 441.33 INCH: 2 X 10.25 X 17.375
DIMENSIONS (PACKAGED HEIGHT/DEPTH/WIDTH)	MM: 88.9 X 444.5 X 495.3 INCH: 3.5 X 17.5 X 19.5
RACK UNITS	1 UNIT
WEIGHT (UNIT)	11 LBS /5 KG
WEIGHT (PACKAGED)	15 LBS/7 KG
*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS & DIMENSIONS ARE APPROXIMATE	

Table of Contents

Device Feature Overview:

Uncompressed ~ Uncompressed base-band video means that what you put in it what comes out. This allows the integrator ultimate control to use any infrastructure they want. Use pure fiber like Cleerline, Bullet Train Cables (Long Haul, Shout Haul), or 18Gbps HDBaseT Extenders (AC-EX40-444) to get the full bandwidth and full picture!

Ultimate HDR Support ~ This matrix supports all flavors of HDR in all formats. Including HDR, HDR10, HDR10+, Dolby Vision, HLG, BBC and NHK. All of them are supported in up to 4K 60Hz and up to 12 Bit Deep Color. All color space compression are compatible.

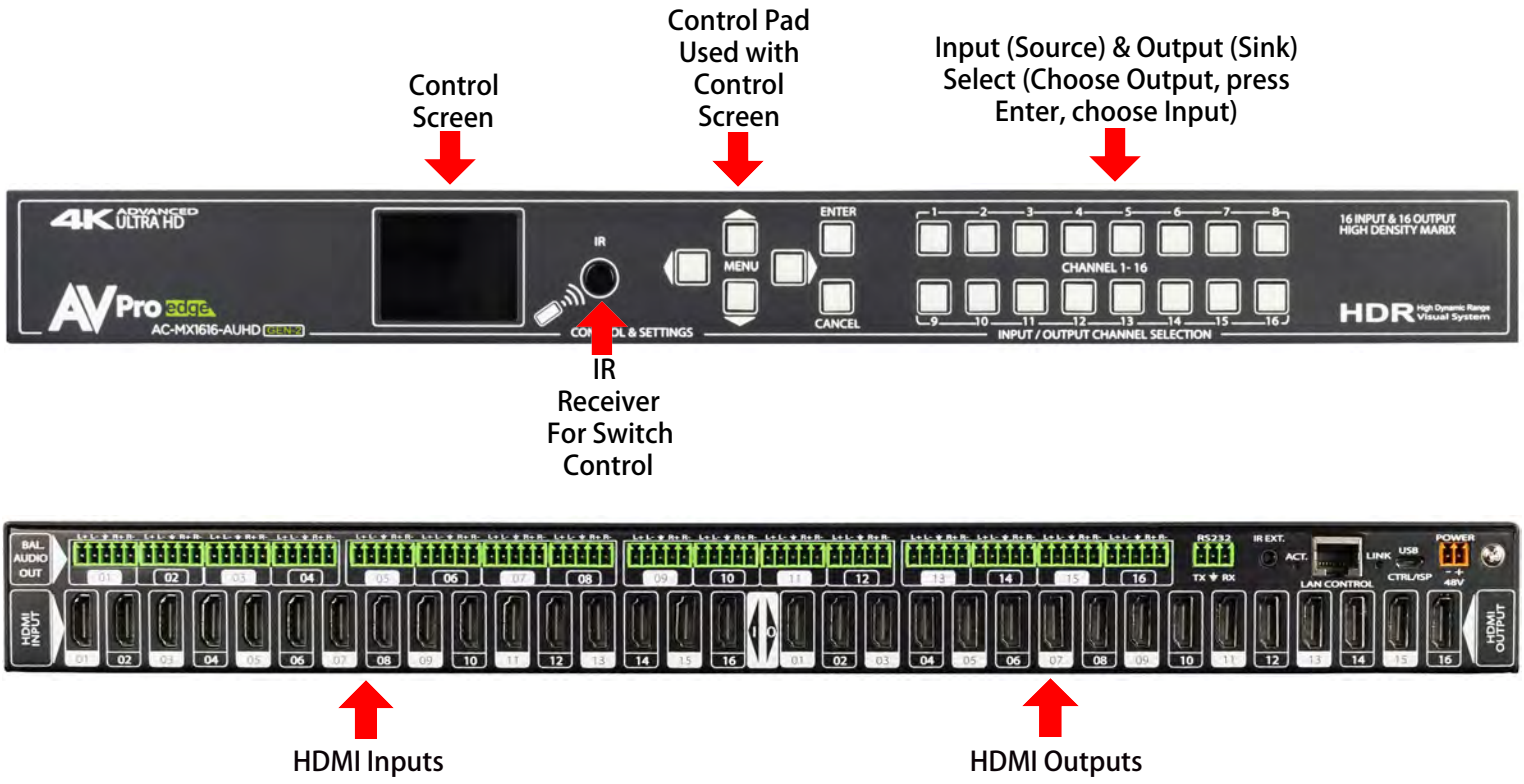
Extreme EDID Management ~ With 29 on board EDID's, including HDR EDID' s, not getting a picture is simply a thing of the past. You can manage the input side of the switch by selecting a preloaded EDID. It also has the ability to INSTANTLY read an EDID from any connected display and apply it to the desired input, all with the push of a button. Goodbye EDID problems...

Front Panel Screen ~ Make setup a breeze! The front panel allows you to do basic setup including; EDID, Audio, Matrixing and network. All without connecting a PC or hooking anything up. This additional mode of control is a welcome resource on the job site.

WebOS~ Full matrix control is available on the internal WebOS - Simply plug the matrix into the network and punch in the default IP (192.168.1.239) or use DHCP to connect to a full control system! The WebOS is designed with mobile devices in mind, so feel free to use you phone or tablet for real-time control.

Fast Switching ~ Our unique design has allowed us to improve high bandwidth switching speeds. Average speeds of less than 3 seconds – this is an industry best for this advanced level of actual uncompressed, high bandwidth w/ HDR switching.

Audio De-Embedding ~ Our unique Audio De-Embedding allows 3 modes - Bind to Input, Bind to Output, or Matrix.



Basic Setup:

Quick Setup:

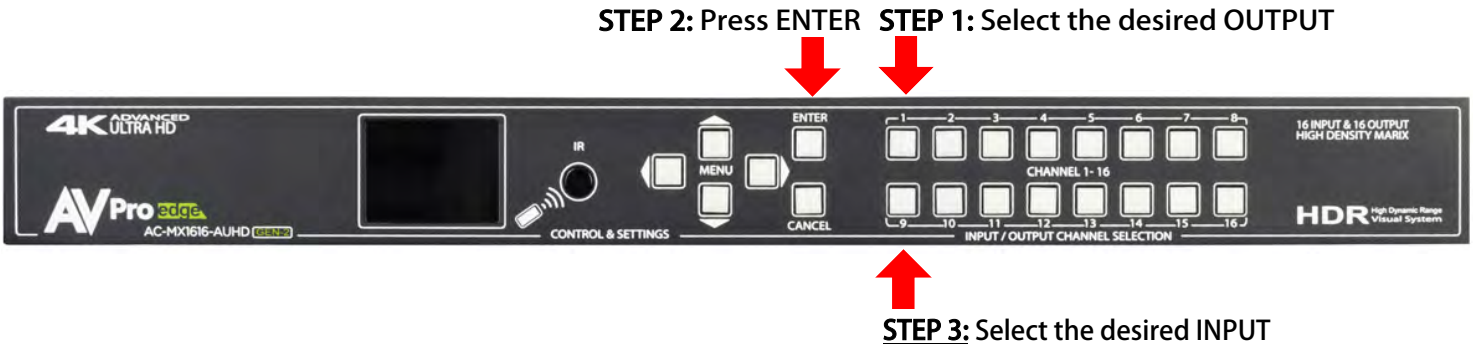
1. Connect the HDMI input sources (Blu-ray, Set Top Box, etc...) to the AC-MX1616-AUHD-GEN2
2. Connect the HDMI output devices (AVR, Display, Distribution Amplifier, Extender) to the AC-MX1616-AUHD-GEN2
3. Power on the sources
4. Connect the power supply's into the AC-MX1616-AUHD-GEN2 (You need to plug in both supply's)
5. Turn on output devices/displays
6. You may now use the front panel controls, supplied IR remote or free PC software to control the switch.

Front Panel Control

Switching:

The AC-MX1616-AUHD-GEN2 can be switched from the front panel by selecting the OUTPUT, Press ENTER, then select the INPUT:

1. Press the button (1 through 16) that corresponds with the OUTPUT (Display, or Sink Device) you would like to send a source.
2. Press ENTER
3. Now select the desired INPUT on (1 through 16)
4. The route is now set.
5. You may also navigate to the "Switch" Menu on the Control Screen to manage the routes (See "Switch Routing" below)



Switching with the front panel controls.
NOTE: Select the OUTPUT, press ENTER, and then select the INPUT

Navigating the Control Screen:

Home Screen

You can use the control screen to setup/control several key features including:

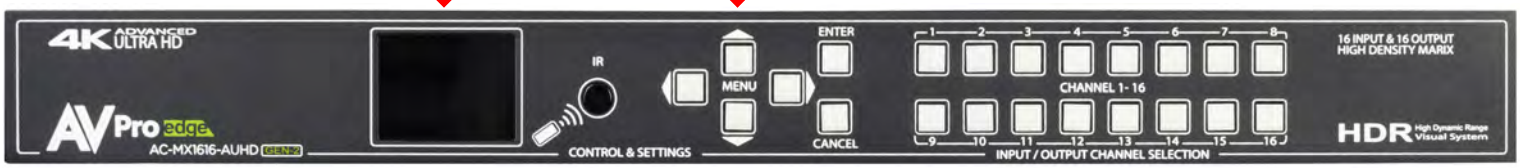
- **Matrix Switch Routing** ~ Control switching or view the current routing
- **EDID Management** ~ View, adjust EDID Configuration
- **Audio Setup & Routing** ~ Set the default extracted audio mode to Bind to Input, Bind to Output or Matrix - When in Matrix, audio route can be selected.
- **Network Setup** ~ View/Setup IP Address (Host/device, Gateway, Subnet), Toggle DHCP, set port number and view MAC Address

To navigate the control screen you have a 6-button control panel that control the "Control" Screen.

- **"Menu"** area consists of UP, DOWN, LEFT and RIGHT - These are your navigation buttons. Press these buttons to move through them menus to your desired selections. Your desired selection will be bordered or highlighted
- **"Enter"** Selects the highlighted item and advances to the next set of options or sets your selection
- **"Cancel"** Stops what you are doing and takes you back one menu or to the home screen.

Control Screen

Control Screen Navigation Buttons

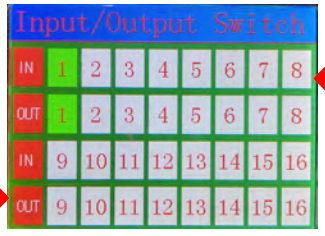


Control Screen - Switch Routing:

Once you select the "Matrix" option, you have 2 primary functions:

- View the current rout settings so you can verify that your system is working properly and the routes are correct
- Set new matrix routes. You can change the matrix routes here as well, this is good for demonstrating switching. NOTE: When setting a new route, select OUTPUT first then INPUT

Select "Matrix"



Then Choose Input

Select Output First

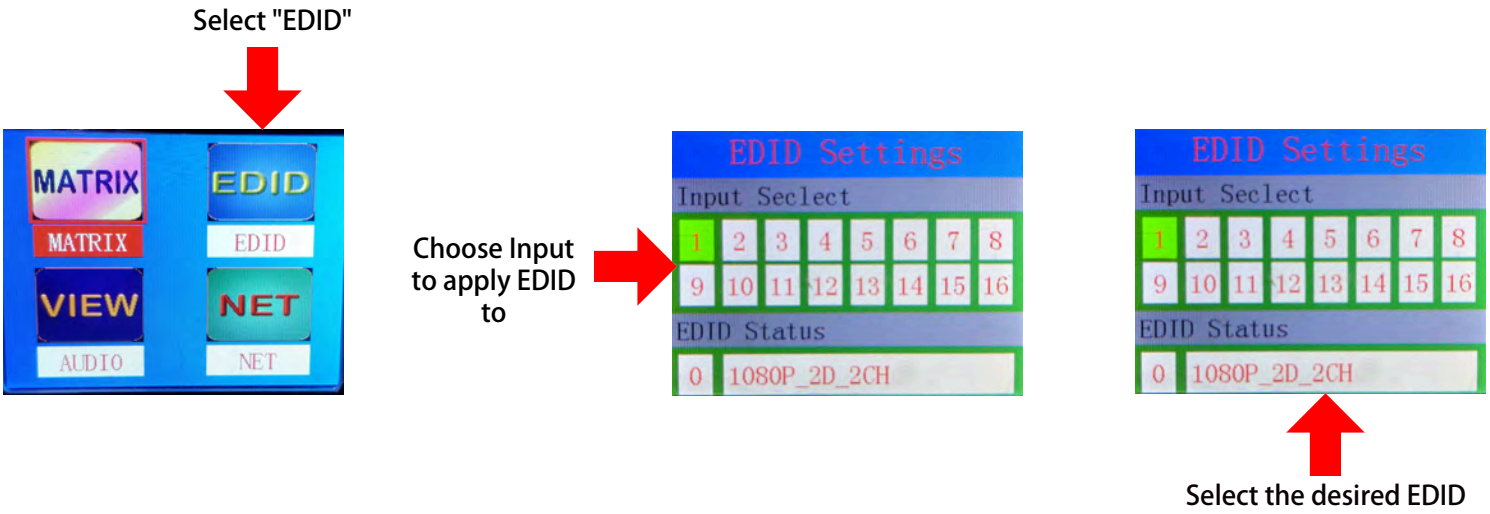
Control Screen - EDID Management:

Instantly and easily set and manage EDID functions right from the front screen. EDID management will help you get the right signal from the source device adding additional security that nothing unsupported will be mistakenly fed into the system.

EDID effectively tells the source what the system is capable of handling, devices without robust EDID control just have to hope the source behaves how we want it to. With the AC-MX1616-AUHD you control the sources:

To Set the EDID, just choose EDID from the "Home Screen" and then select the INPUT you want to set. Finally toggle through the EDIDs until you get the one you want. For the most plug and play compatibility, we recommend using "1080P 2CH" (Which is the default setting). This is ideal for bars, restaurants, and homes. There is also the ability to upload a custom EDID is desired (Has to be done in Serial Control Software).

Available EDID options are listed below. Additionally, you can copy an EDID from a display using Serial (more later in this manual) - This is recommended for advanced users doing HDR distribution.



Available EDID's:

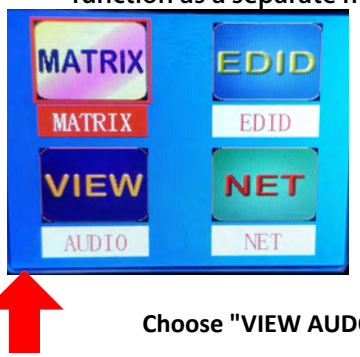
1. 1080P_2CH
2. 1080P_6CH
3. 1080P_8CH
4. 1080P_3D_2CH
5. 1080P_3D_6CH
6. 1080P_3D_8CH
7. 4K30HZ_3D_2CH
8. 4K30HZ_3D_6CH
9. 4K30HZ_3D_8CH
10. 4K60HzY420_3D_2CH
11. 4K60HzY420_3D_6CH
12. 4K60HzY420_3D_8CH
13. 4K60HZ_3D_2CH
14. 4K60HZ_3D_6CH
15. 4K60HZ_3D_8CH
16. 1080P_2CH_HDR
17. 1080P_6CH_HDR
17. 1080P_8CH_HDR
18. 1080P_3D_2CH_HDR
19. 1080P_3D_6CH_HDR
20. 1080P_3D_8CH_HDR
21. 4K30HZ_3D_2CH_HDR
22. 4K30HZ_3D_6CH_HDR
23. 4K30HZ_3D_8CH_HDR
24. 4K60HzY420_3D_2CH_HDR
25. 4K60HzY420_3D_6CH_HDR
26. 4K60HzY420_3D_8CH_HDR
27. 4K60HZ_3D_2CH_HDR
28. 4K60HZ_3D_6CH_HDR
29. 4K60HZ_3D_8CH_HDR
30. User EDID 1
31. User EDID 2
32. User EDID 3

Control Screen - Audio Settings

Audio Settings has two functions:

Function 1 - Set the default extracted audio mode. There are three options:

- Bind to output (extracted audio witches with the video, this is the default mode)
- Bind to input (extracted audio is fixed to the corresponding input by the same number)
- Independent/Matrix (extracted audio can be routed however you like and there are commands to allow it to function as a separate matrix)



Choose "VIEW AUDO"

Highlight this area and press "ENTER". You can now toggle up and down to select the mode.

Function 2 - View/Route Extracted Audio Matrix. (NOTE: you can only route the audio if "MATRIX" mode is selected above. To route audio, follow the same logic as video switching in this menu:

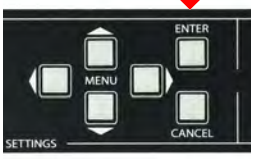
1. Select the extracted audio OUTPUT first by pressing the number or navigating to it
2. Press ENTER to set the selection
3. Select the desired INPUT by toggling to it with UP/DOWN or simply selecting the number on the keypad.
4. Press ENTER (This only applies if you used up/down to toggle to your desired input)

Choose "VIEW AUDO"

Make sure this area says MATRIX

Press the desired extracted audio OUTPUT number

Press Enter



Press the desired INPUT number

Control Screen - Network (IP) Setting

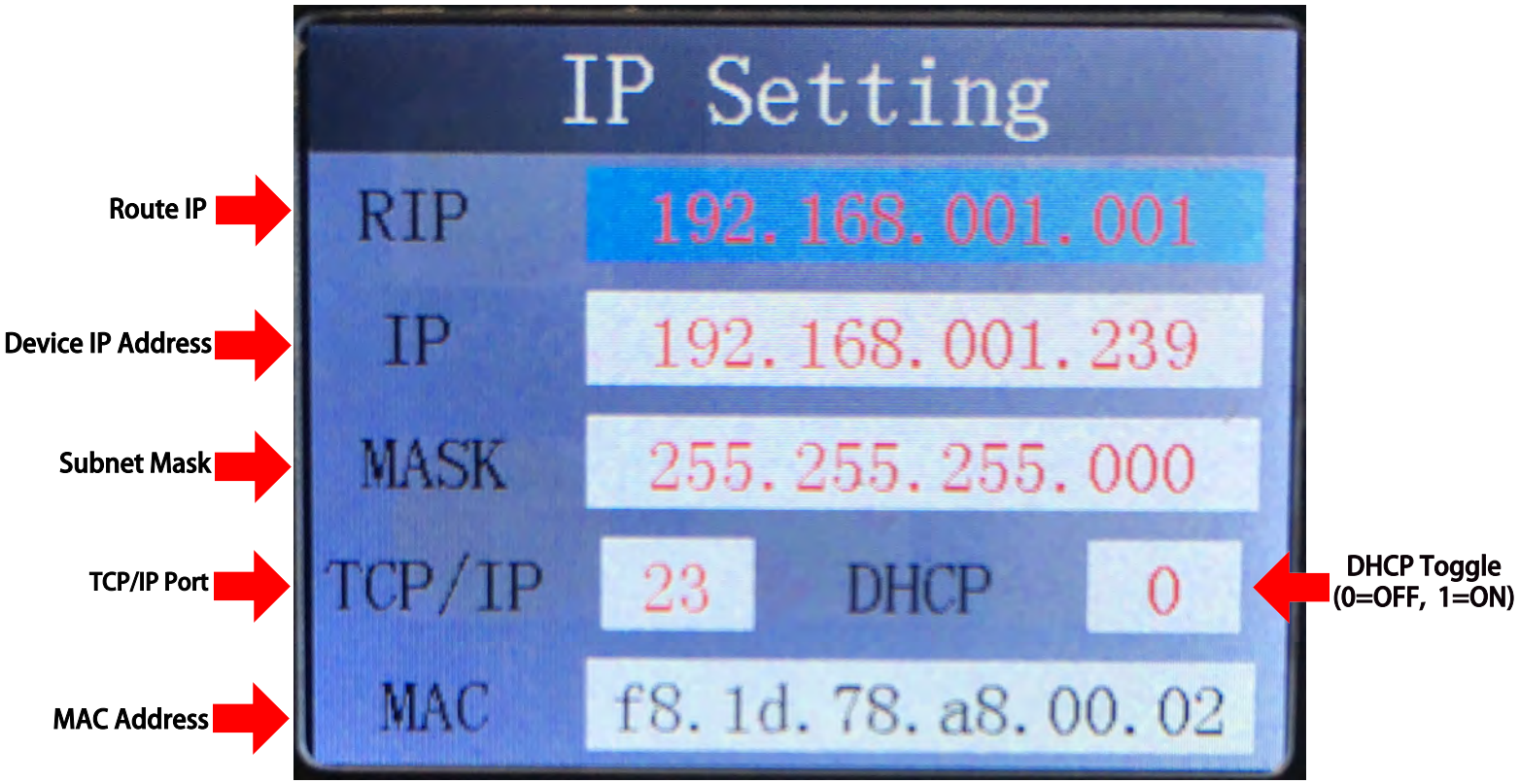
Here you can setup the Matrix with your preferred network settings. From the front panel you can:

- View the current IP Settings and MAC address
- Set static Route IP (Default is 192.168.001.001)
- Set static Device IP **(Device Default is 192.168.001.239)**
- Set Static Net Mask (Default is 255.255.255.0)
- Change the TCP/IP Port (Default is Port 23)
- Toggle DHCP (Default condition is DHCP OFF) (0=OFF, 1=ON)

To navigate the IP Setting Screen:

1. Navigate up and down to select (Use Enter Button) the option you want to address (RIP, IP, Mask, TCP.IP, DHCP)
2. Once selected you can use up and down to to change the first number or press enter to skip it and continue to the next.
3. Once you set the last possible number (Or complete the IP) it will back you to the main screen to make another selection

NOTE: You can send **Telnet** commands to the machine by IP, the commands are the same commands used for RS232 listed in the "Command List"



IR Details:

IR IN on this machine is for controlling the AC-MX1616-AUHD, RS232 or IP Control are the recommended methods, but IR can be used in some circumstances. The IR INPUT is for an IR Receiver EYE only. The IR Receiver Eye below can plug into the IR Ext. port.

1. Use the supplied IR Remote (Pictured) and select the OUTPUT then INPUT
2. Lear IR Codes from the supplied remote
3. Use discreet NEC/HEX IR Codes to program a 3rd party control system or IR remote. Check www.avproedge.com for discreet IR codes, or contact us to get them.

IR Remote Control:

The Matrix can be switched with IR Commands (Remote or other) in several ways:

RS-232 and TCP/IP Commands:

The AC-MX1616-AUHD-GEN2 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.

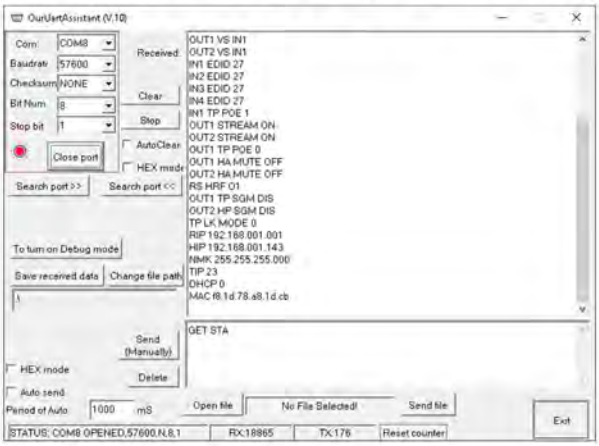
For TCP/IP control commands use Telnet Port 23.

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.

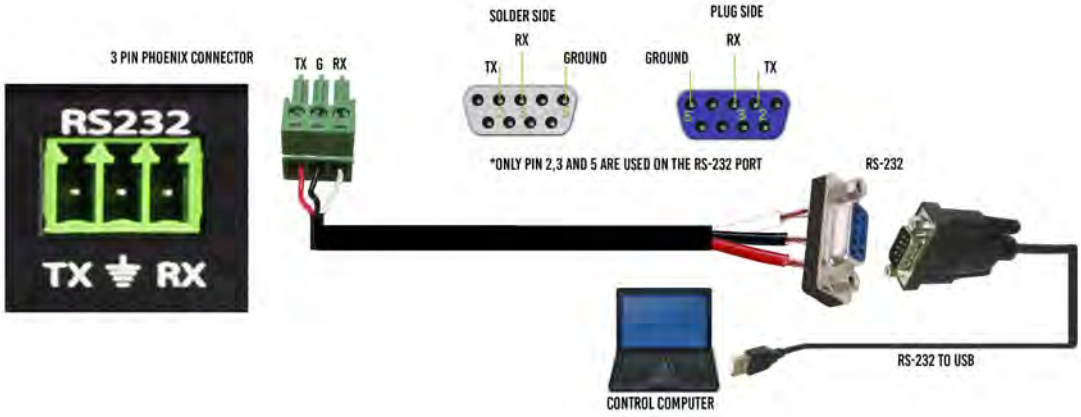
The unified command list (ASCII) is listed below.

USB CONTROL FOR AVPRO EDGE



WWW.AVPROEDGE.COM/DRIVERS

RS-232 CABLE FOR AVPRO EDGE



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The Matrix 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:

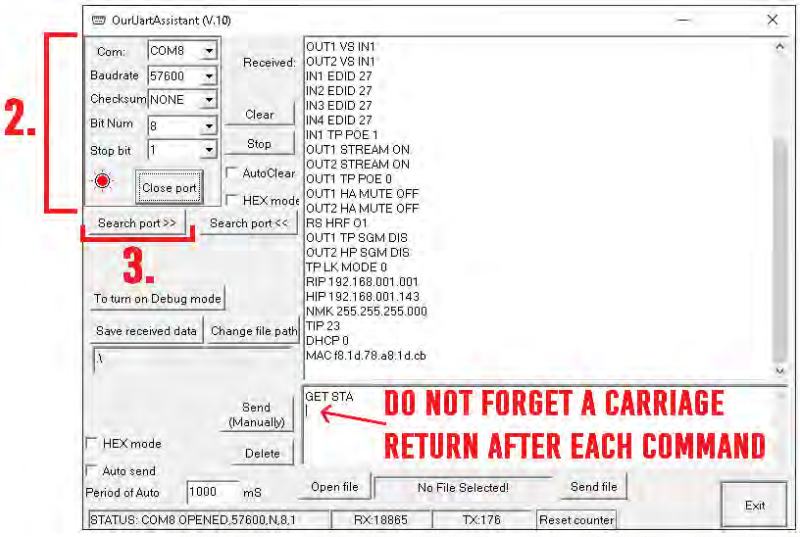
57600,n,8,1 (baud: 57600, no parity, 8 data bits and 1 stop bit) with no handshaking.

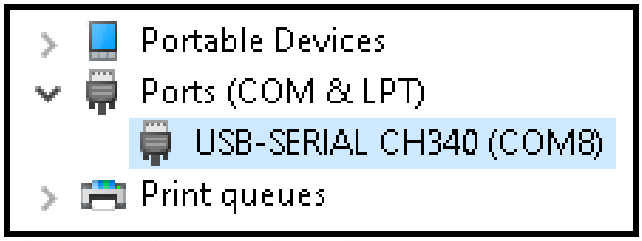
Please add a return (Enter key) after each command when using direct commands. The unified command list (ASCII) is listed on the next page.

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"

```
DHCP 0
DHCP 1
HIP 192.168.001.239
RIP 192.168.001.001
NMK 255.255.255.000
```





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=[0~8](0=ALL)}
GET INx VID FMT INF	: Get Input x Video Format Info{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=1-16)
SET OUTx VS INy	: Set Output x To Input y {x=[0~16](0=ALL), y=[1~16]}
SET OUTx EXA EN/DIS	: Set Ex-Audio Output Enable/Disable{x=[0~16](0=ALL)}
SET OUTx EXADL PHy	: Set Ex-Audio Delay{x=[0~16](0=ALL), y=[0~7](0=Bypass,1~7=90,180,270,360,450,540,630MS)}
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=[0~16](0=ALL), y=[1~16]}
SET OUTx EXAUD LEVy	: Set Output x EQ-Audio Volume Levely{x=[0-16](0=all),y=[0~20]}
SET OUTx STREAM ON/OFF	: Set Output x Stream ON/OFF{x=[0~16](0=ALL), y=[1~16]}
SET OUTx SGM EN/DIS	: Set Output x Signal Generator Enable/Disable{x=[0~16](0=ALL)}
GET OUTx VS	: Get Output x Video Route {x=[0~16](0=ALL)}
GET OUTx EXA	: Get Ex-Audio Output Enable/Disable Status{x=[0~16](0=ALL)}
GET OUTx EDID DATA	: Get Output x EDID DATA{x=[1~16]}
GET EXAMX MODE	: Get Ex-Audio Matrix Mode
GET OUTx AS IN	: Get Output x Ex-Audio Route{x=[0~16](0=ALL)}
GET OUTx EXAUD LEV	: Get Output x EQ-Audio Volume Level{x=[0-16](0=all)}
GET OUTx STREAM	: Get Output x Stream ON/OFF Status{x=[0~16](0=ALL)}
GET OUTx SGM	: Get Output x Signal Generator Status{x=[1-16](0=ALL)}

Settings: Baud Rate 57600, Data Bits 8, No Parity, 1 Stop Bit

Command List cont:

NOTE - Visit www.avproedge.com to get the Notepad version of the command list for easy copy/past access.

Input Setup Commands:	(Note:input number(x)=HDMI(x),x=1-16)	
SET INx EDID y	: Set Input x EDID {x=[0~16](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)_HDI	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=[0~16](0=ALL), y=[1~16]}	
SET INx EDID Uy DATAz	: Write EDID To User y Buffer of Input x{x=[0~16](0=ALL), y=[1~3],z=[EDID Data]}	
SET INx TMDS ON/OFF	: Set Input x Port Power Status ON/OFF {x=[0~16](0=ALL)	
GET INx EDID	: Get Input x EDID Index{x=[0~16](0=ALL)}	
GET INx EDID y DATA	: Get Input x EDID y Data{x=[1~16],y=[0~32]}	
GET INx TMDS	: Get Inputx Port Power Status{x=[0~16](0=ALL)	
Preset Group Command:	**(Note:Output number(x)=HDMI(x),x=1-16)**	
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 zz	: Set Preset Mode Group x All Output To Input{x=[1~10],z1-z1 6[Input]}	
	: zz={z1.z2.z3.z4.z5.z6.z7.z8.z9.z10.z11.z12.z13.z14.z15.z16}	
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)}	
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	
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=[1~16],y=[1~16],zz=[00~FFH]}	
GET IR SYS	: Get IR System Code	
GET IR OUTx INy CODE	: Get IR Data Code {x=[0~16](0=All),y=[1~16]}	

Using Multiple Units In One System:

Device Addresses When Using Serial Communication:

NOTE: Only set device address when cascading multiple units together and using RS232 as your control method! You also have to send the device address when doing advanced routing while sending commands by serial (next page) even if it is default "A00". You NEVER use device addresses when using IP control or TELNET

When using serial communication it is good to be aware of the devices "Address" You will want to know the device address as this will determine which AC-MX1616-AUHD will receive a command. All of the drivers are built so that if you use serial communication you will use ONE instance of the driver and select the size. i.e 9x18, 9x27 etc...

All AC-MX1616-AUHD are address "A00" by default and if you are using just one device you do not need to place this in front of the serial command.

EX1: If you have a standalone unit and are using serial control you can just send a command without the address:

"SET OUT5 VS IN3" ----This will set Output 5 to Input 3

EX2: If you have two units in a system you have to label them A01 and A02, so a command will look like:

"A02SET OUT5 VS IN3" ----This will set Output 5 to Input 3 ON SWITCH TWO. Also, please note that there is no "space" between the address and the command

To set and device address you can use the PC Control Software or send the command "SET ADDR xx" (xx = 01 through 99)

Cascading with IP Control:

With IP you have to have a direct IP connection to each unit, and regard them as individual matrices. So for a 9 units in a system with IP control, you have to connect Ethernet to all 9 matrices. If you are using a 3rd party control driver, install 9 instances of the drivers, and regard them all as individual 16x16 matrices.

When using IP DO NOT use serial system addresses, as the IP addresses will serve the same purpose While it can be done if one so desires, it complicates the programming.

A best practice is to set a static IP address for each unit, rather than DHCP.

Extracted Audio:

The extracted audio ports have distinct operating modes. Your desired mode can be set to suite your particular installation. The 3 modes are:

From Input ~ This is the default configuration. In this mode the audio port number corresponds to the INPUT signal. This is ideal for systems where audio is matrixed separately in a zoned amplifier.

From Output ~ This configuration will automatically have the audio follow OUTPUT, so the audio from the extracted port always matches the HDMI output. This is ideal for systems that use local AVR's for some of the zones.

Independent/Matrix ~ This mode allows you matrix the extracted audio outputs independent of HDMI. In this mode a new set of commands becomes available to be able to route audio however you want. This can be used as a separate zoned audio matrix with only using an amplifier.

Setting up Extracted Audio Routing:

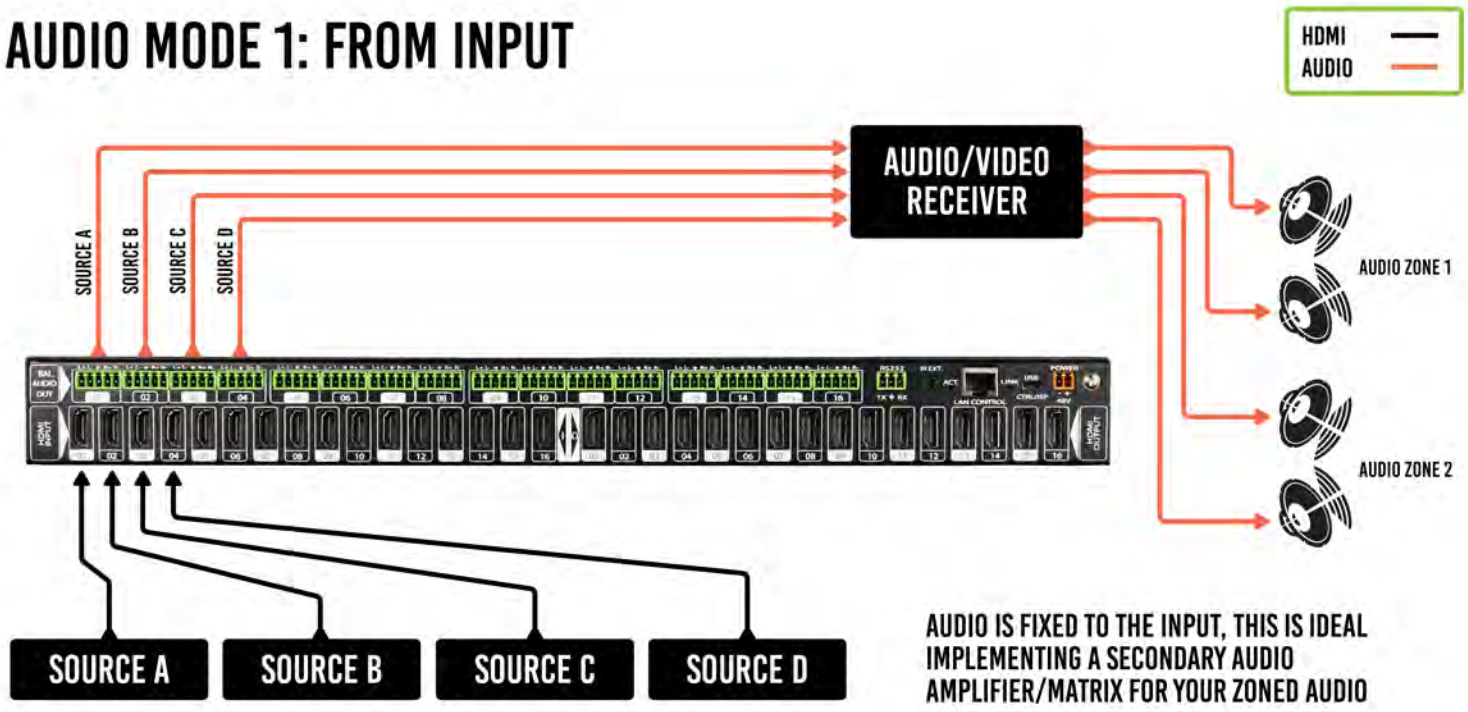
You can set up Extracted Audio Routing in the PC Software, Driver or by sending the following command:

SET EXA MODEy -- Where (y=0-2) 0=From Input, 1=From Output, 2=Independent.

If you set to "Independent" a new set of commands is available to you to matrix the ports:

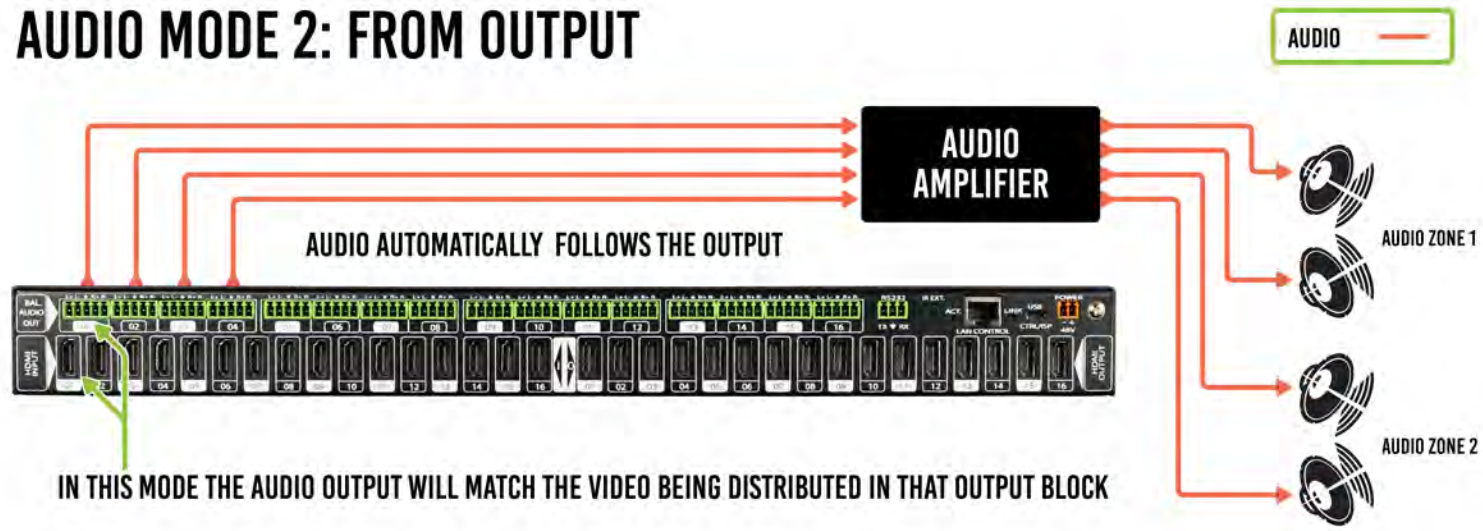
SET OUTx EAS INy -- Where (x=0-16) 0=ALL, 1-16=Desired Output & (y=1-16) 1-16=Desired Input

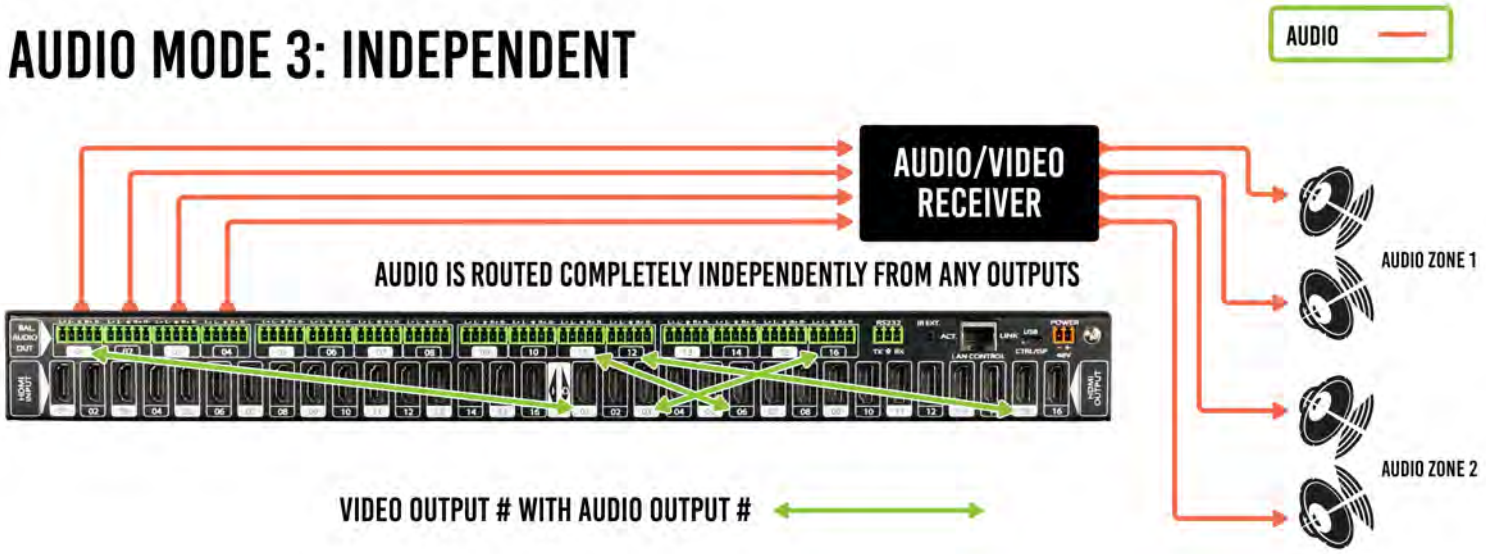
NOTE: Extracted Audio Ports are PCM 2CH audio up to LPCM 6 CH, Dolby Digital 5.1 & DTS. No down-mix.



Extracted Audio cont:

Audio Diagrams:



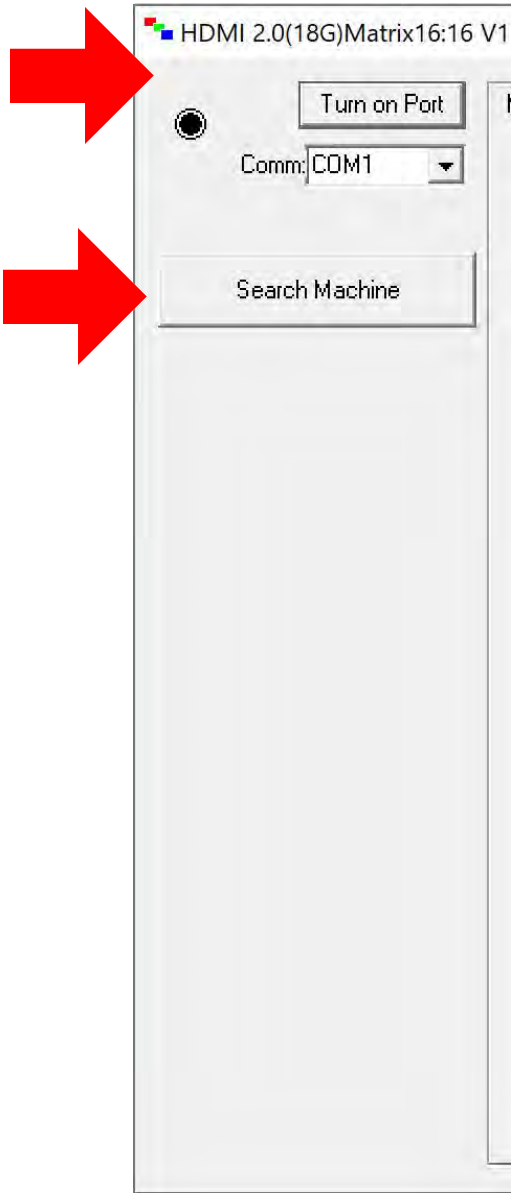


PC Control Software - Side Bar:

Note: PC Control Software can be used when connected to the RS232 or Mini USB Port.

Connection Area - Use the drop down to select the COM Port or press "Search Machine" to search your computer for open COM Ports. The light will be red if there is a successful connection.

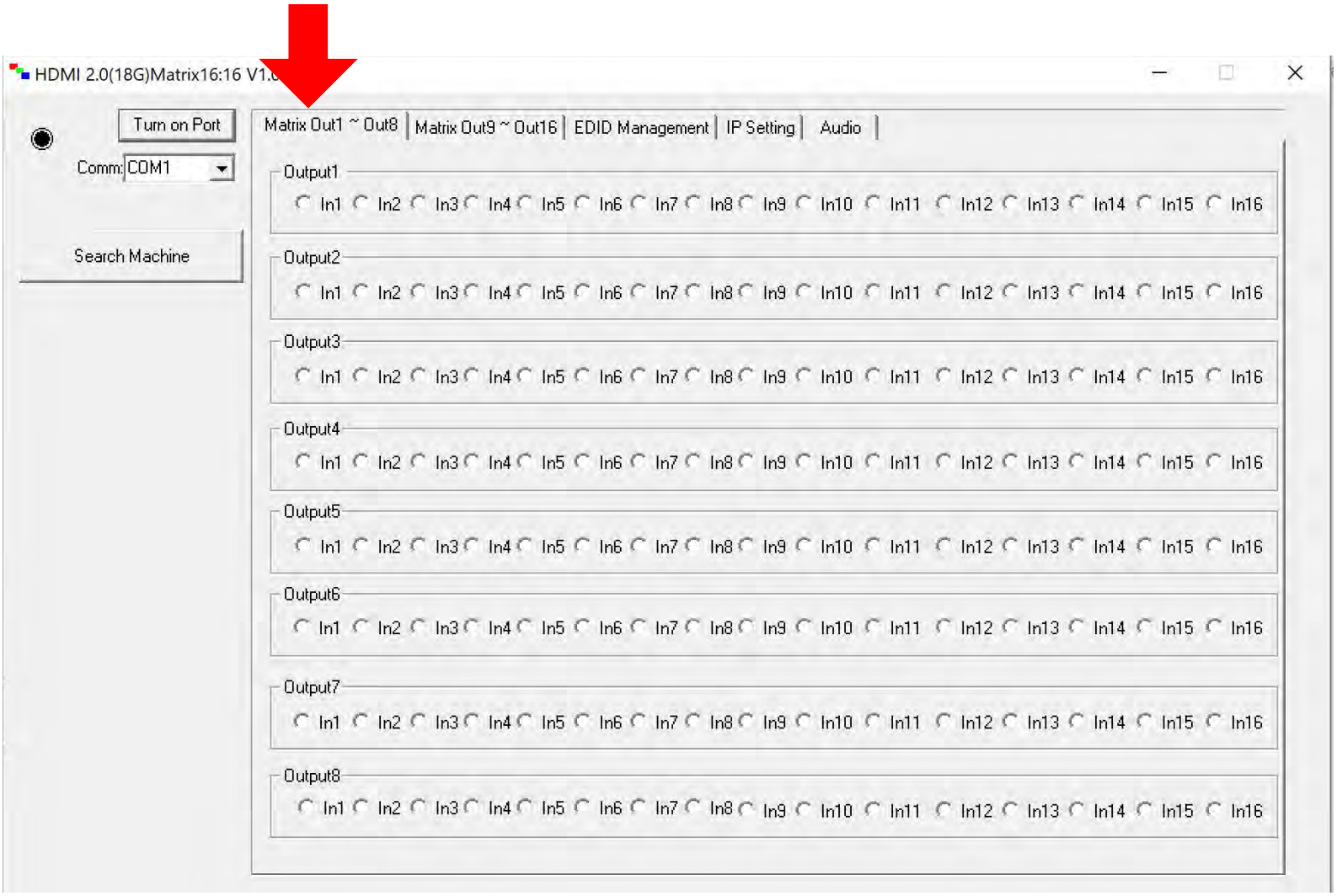
Select/Manage Addresses - Use the drop down to select the Address of the device you want to control (If cascading multiple units). Press "Address Management" to set the Addresses. View "Address Management' Tab later for more.



PC Control Software - Matrix Tab (OUTPUT 1-8):

Note: PC Control Software can be used when connected to the RS232 or Mini USB Port.

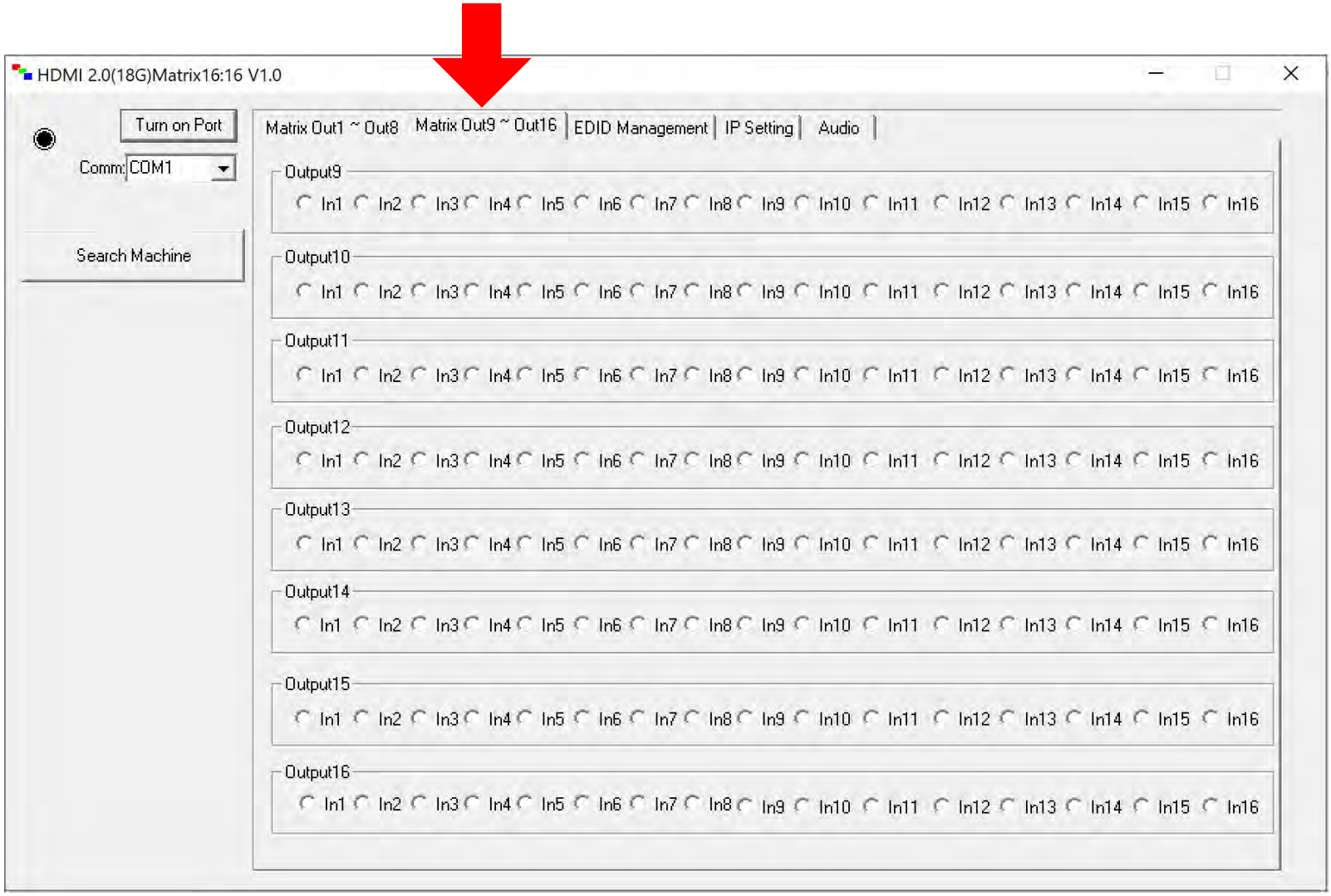
Switching - Simply choose the INPUT radio button you want to see on each output.



PC Control Software - Matrix Tab (OUTPUT 9-16):

Note: PC Control Software can be used when connected to the RS232 or Mini USB Port.

Switching - Simply choose the INPUT radio button you want to see on each output.

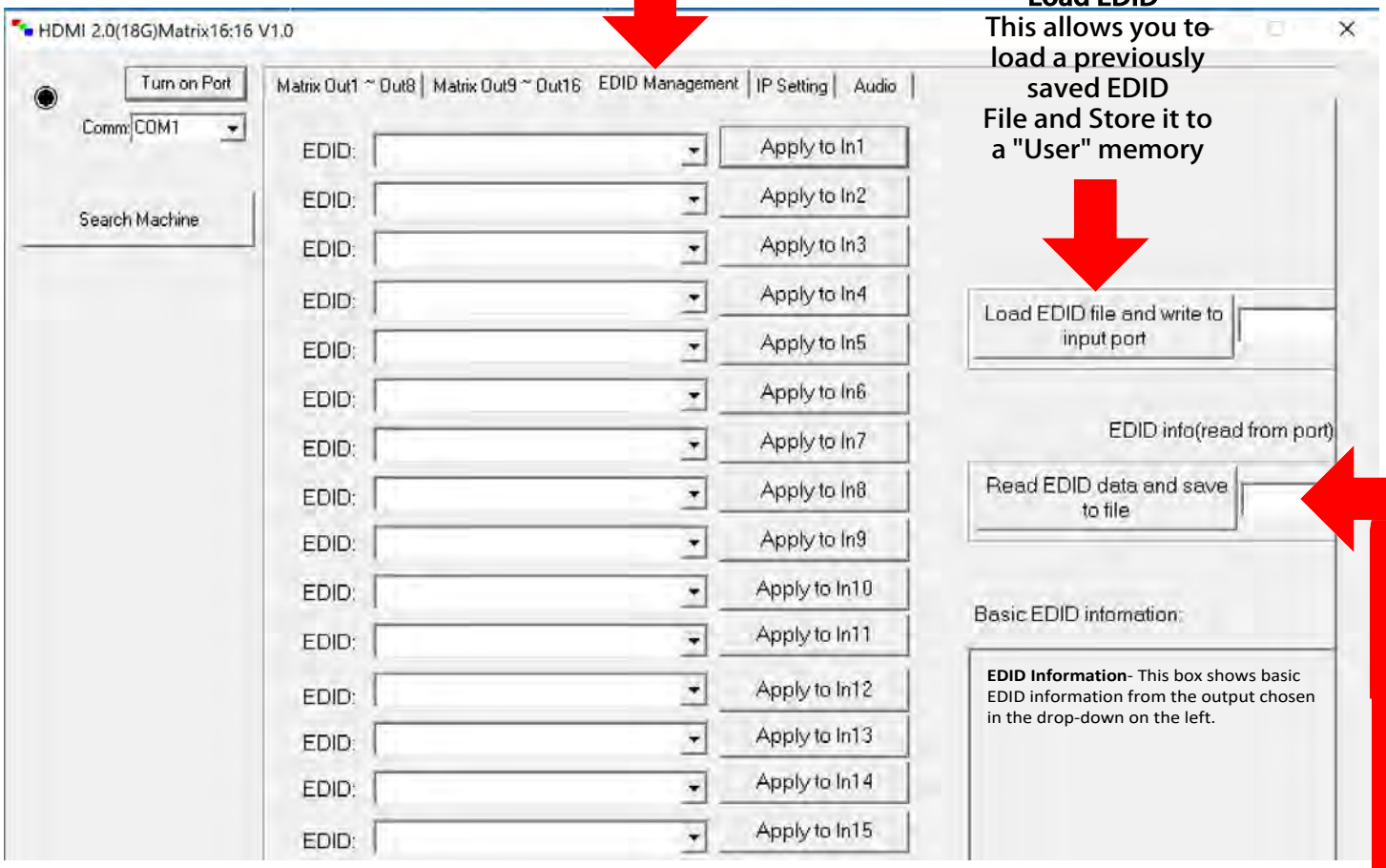


PC Control Software - EDID Tab:

Note: PC Control Software can be used when connected to the RS232 or Mini USB Port.

Set EDID - Choose the EDID you want to use from the drop down and press "Apply to Input x" to set it.

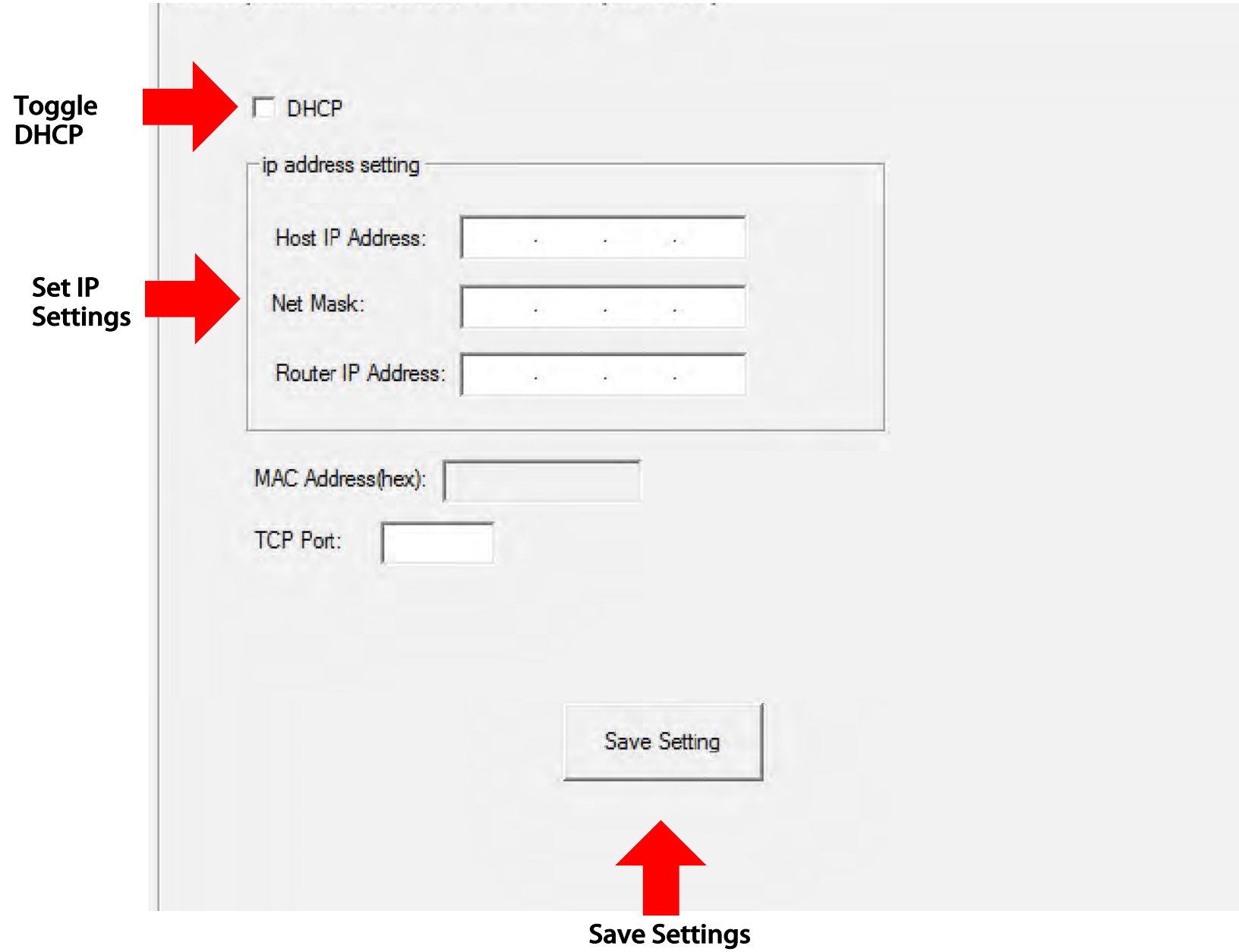
Load EDID- This allows you to load a previously saved EDID File and Store it to a "User" memory



Read EDID and save as file- Select the Output from the drop-down and click the button to save the EDID as a file, you can upload the EDID later and apply it to one of the "USER" EDIDs. You can then apply that USER EDID to one or more of the inputs.

PC Control Software - IP Config Tab:

Note: PC Control Software can be used when connected to the RS232 or Mini USB Port.

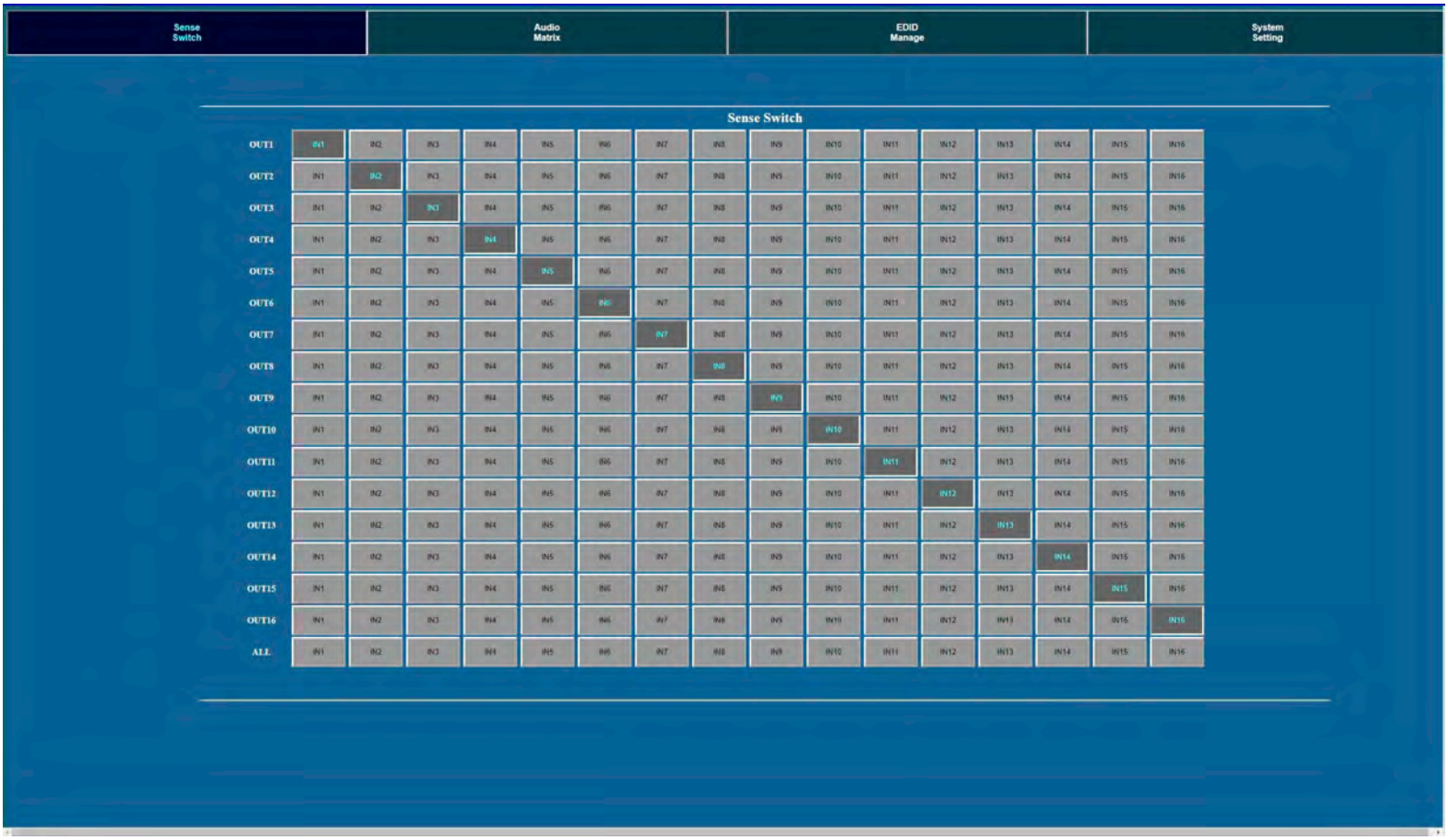


Web Interface: Sense Switch

To access the Web Interface, simply type in the IP address of the device. The default IP address 192.168.001.239, if you have setup a different IP or are not sure simply view the "Net" section on the control screen on the front panel. If you enable DHCP, you will want to find the IP address by looking on the setup screen.

The Sense Switch page is the main page of the Web Interface. Here you can easily control switching of the matrix.

NOTE: The inputs and outputs can be labeled in the "System Config" Tab.



Web Interface: Audio Matrix

The Audio Setting tab allows to:

1 - Select the Ex-Audio Matrix Mode:

- Bind To Output (Default) ~ Extracted audio will switch with the corresponding HDMI Output of the same number
- Bind To Input ~ Extracted audio will be fixed to the corresponding HDMI Input of the same number (Audio will never switch)
- Matrix ~ Extracted audio can be routed independently of the HDMI Matrix (NOTE: You can only use the "Audio Matrix" control grid when this mode is selected.

2 - Audio Matrix ~ This grid allows you to control the extracted audio route independently of the HDMI route. This function is only available if the Ex-Audio Mode is "Matrix".

3 - Audio Status ~ You can turn each extracted audio port ON or OFF (Mute)

Web Interface: EDID Manage

The EDID Manage tab allows you to set the EDID for each input. To set the EDID:

1. Select the desired EDID form the drop down menu of the input you want.
2. Press Apply

Available EDID's:

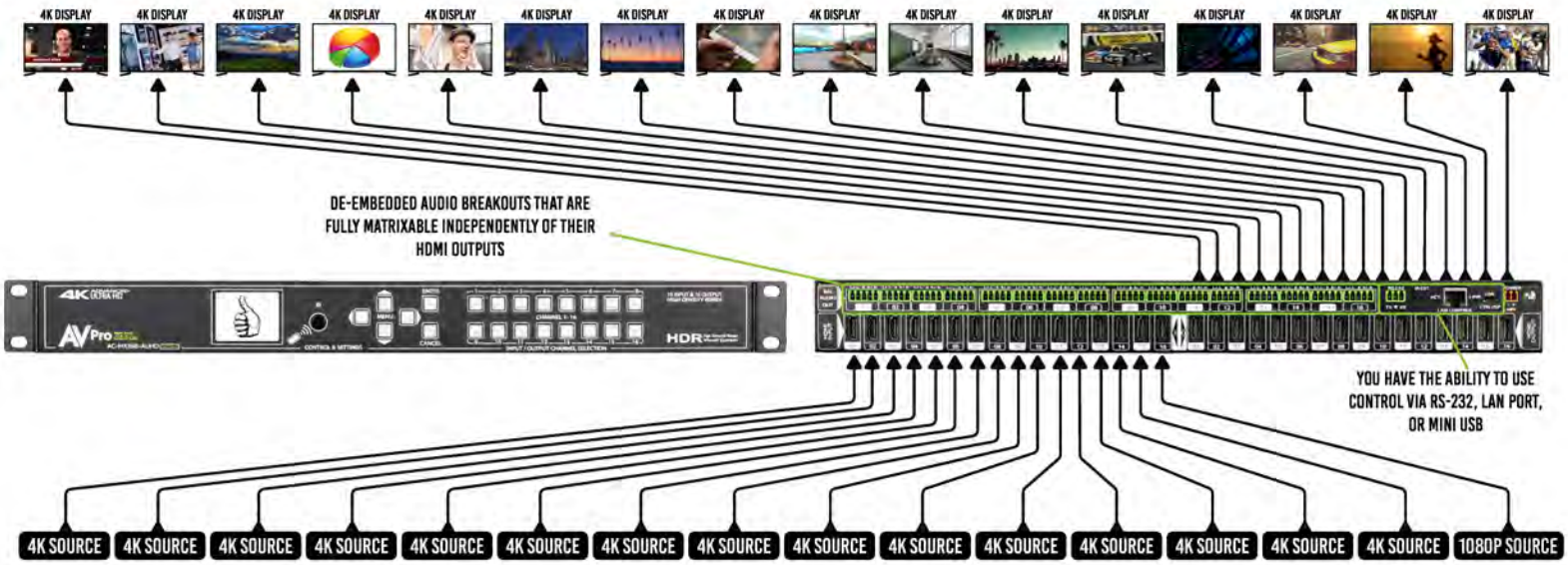
0. 1080P_2CH
1. 1080P_6CH
2. 1080P_8CH
3. 1080P_3D_2CH
4. 1080P_3D_6CH
5. 1080P_3D_8CH
6. 4K30HZ_3D_2CH
7. 4K30HZ_3D_6CH
8. 4K30HZ_3D_8CH
9. 4K60HzY420_3D_2CH
10. 4K60HzY420_3D_6CH
11. 4K60HzY420_3D_8CH
12. 4K60HZ_3D_2CH
13. 4K60HZ_3D_6CH
14. 4K60HZ_3D_8CH
15. 1080P_2CH_HDR
16. 1080P_6CH_HDR
17. 1080P_8CH_HDR
18. 1080P_3D_2CH_HDR
19. 1080P_3D_6CH_HDR
20. 1080P_3D_8CH_HDR
21. 4K30HZ_3D_2CH_HDR
22. 4K30HZ_3D_6CH_HDR
23. 4K30HZ_3D_8CH_HDR
24. 4K60HzY420_3D_2CH_HDR
25. 4K60HzY420_3D_6CH_HDR
26. 4K60HzY420_3D_8CH_HDR
27. 4K60HZ_3D_2CH_HDR
28. 4K60HZ_3D_6CH_HDR
29. 4K60HZ_3D_8CH_HDR
30. User EDID 1
31. User EDID 2
32. User EDID 3

Web Interface: System Config

The System Config tab let you achieve two functions.

1. Setting up your network (IP) settings
2. Labeling the Inputs and Outputs for the "Sense Switch" Tab

Common Usage Diagram



Maintenance & Support

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 wit 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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