18GBPS HDMI MATRIX SWITCHERS

4X4 AND 8X8 18GBPS 4K60 (4:4:4) HDMI MATRIX SWITCHERS

QUICK START GUIDE

These AVPro Edge matrix switches have 4 (AC-MX44-AUHD) or 8 (AC-MX88-AUHD-GEN2) HDMI inputs, and 4 or 8 HDMI outputs, allowing 18Gbps HDR signals to be shown on any of the connected displays. Fully matrix-able audio allows you to move the audio signal independently from the video signal at any of the de-embedded audio outputs. Audio delay is also 'on-board' so you can manage lip-sync issues before they become a problem. Also, with built-in scalers you don't have to forfeit that 4K signal just because you have a few older displays. Additional features include IP control, EDID management, military grade stability, LCD Display, and more!

*NOTE - The only difference between the AC-MX44-AUHD and the AC-MX88-AUHD-GEN2 is the amount of inputs and outputs. The AC-MX44-AUHD has 4 HDMI inputs and outputs while the AC-MX88-AUHD-GEN2 has 8 HDMI inputs and outputs.

GETTING CONNECTED

All of the connections are located on the rear of the switch
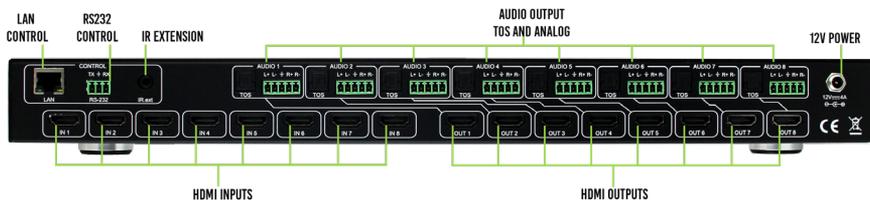
1. Connect sources to the HDMI Inputs on the back of the switch
2. Connect displays to the HDMI Outputs on the back of the switch
3. If you are using Audio Extraction, connect either Toslink or analog audio to an AVR, amplifier, or surround sound processor.
4. If you are using the IR extension, connect the IR extension cable and position the IR receiver in the desired location.
5. If you are connecting the switch to the network, connect the LAN port to an access point or router.
6. Connect the 12v power supply. Be sure to screw it down so it can't accidentally fall out.
7. Turn on all sources, devices, and displays

From here the Matrix Switch can be configured via the front panel controls, the web interface, or with our free PC software.

The Matrix Switch can be controlled via front panel controls, several different automation systems, a web interface, PC software, or the supplied IR remote control.

*NOTE - The free PC software and a full list of supported automation systems and the accompanying drivers can be found at www.AVProEdge.com.

HDMI SWITCHING/MATRIX ROUTING

The main function of an HDMI Matrix Switch is to give the end user the ability to choose any source and watch it on any display. A "traditional" HDMI switch/splitter might allow you to watch multiple displays, but you are restricted to only one source at a time. With this switch your options are endless as you can configure the inputs and outputs however you'd like.

To choose inputs and outputs for HDMI Matrix Routing:

1. Press the bottom number button that corresponds with the desired OUTPUT
2. Once the output is pressed, the button will illuminate. The INPUT buttons will illuminate as well indicating that the switch is ready for you to select an input
3. Select the desired input

*NOTE - Always select the output FIRST

SCALING

The AC-MX44/MX88-AUHD has a scaler built into every HDMI output. In a 2K/4K mixed system you can scale specific outputs up or down to match the connected display. There are 4 scaler modes to choose from:

1. HD-4K (scales 1080p to 2160p)
2. 4K-HD (scales 2160p to 1080p)
3. AUTO (automatically detects the capabilities of the connected display
4. BYPASS (no scaling)

Using the Scaling buttons on the front panel:

1. Press and hold the button of the desired OUTPUT. The output button will illuminate indicating that the switch is ready for you to select a scaler mode
2. Press desired scaler mode
3. Press the desired OUTPUT button again to confirm

AUDIO EXTRACTION

The AC-MX44/MX88-AUHD can extract the audio signal which can then be sent to an AVR, amplifier, or surround sound processor. This is ideal if the system calls for the audio from a source to be played through something besides the TV's internal speakers.

You can extract audio via either Toslink or analog 2ch. Analog is ideal for 2ch systems and distributed audio systems, while Toslink is ideal for (up to 7ch) multi-channel audio systems. Extracted Audio Mode has 3 options:

1. Bind to Output: Extracted audio switches with the video *NOTE - This is the factory default mode
2. Bind to Input: Extracted audio is fixed to a corresponding input by the same number.
3. Matrix Mode: Extracted audio can be routed however you'd like. There are commands to allow it to function as a separate matrix.

By default the audio is bound to the output. This means that the audio from the source will follow the display that you are watching. You may however want to bind the audio to the input instead of the output. One use case of this is if the end user wants to listen to music while watching TV.

AUDIO DIAGRAM
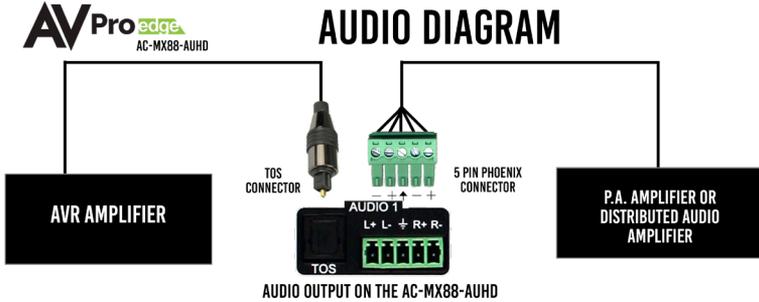
To set up Audio Binding:

1. Press and hold the BYPASS button for 3 seconds
2. The UP and DOWN buttons will illuminate. Toggle between options using these buttons
3. Once you find the desired choice ("Bind to Input", "Bind to Output", or "Matrix"), quick press the BYPASS button

*NOTES
- The 2ch analog audio port only supports 2ch PCM. Be sure to set the audio output of the source to 2ch PCM
- Need to downmix multi-channel audio to 2ch? Check out our AC-ADM-AUHD and AC-ADM-COTO
- Premade 2ch audio cables are available for purchase. Check out AC-CABLE-5PIN-2CH
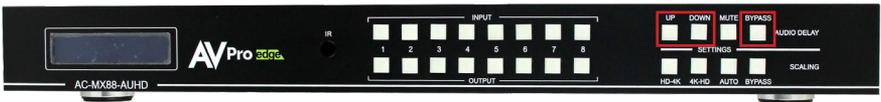
AUDIO MATRIX

Once the switch is set to Matrix audio mode, audio signals can be routed however you'd like. To control the Audio Matrix from the front panel:

1. Press and hold the BYPASS button for 3 seconds
2. The UP and DOWN buttons will illuminate. Press either one until you locate "Matrix" mode.
3. Quick press the BYPASS button
4. Press the desired OUTPUT button (where you would like the audio to go)
5. Press the desired INPUT button (the source that you would like audio from)
6. Press the BYPASS button to exit the Audio Matrix
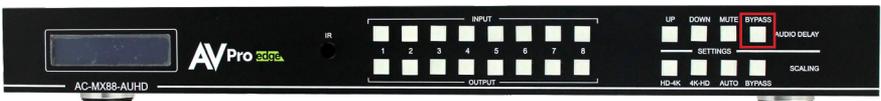
AUDIO DELAY

Are the person's lips out of sync with the person's voice? If so, there may be an audio delay issue. Luckily the AC-MX44/MX88-AUHD has a built in audio delay setting that will help.

Audio Delay is set on the extracted audio OUTPUT (both Toslink and analog audio) of the switch. Each can have it's own setting. Audio Delay has 4 controls:

1. UP (increases delay)
2. DOWN (decreases delay)
3. MUTE (audio is muted)
4. BYPASS (no delay)

To control Audio Delay:

1. Press and hold the OUTPUT button for the display that you would like to delay the audio
2. The UP, DOWN, MUTE, and BYPASS buttons will illuminate, indicating that the switch is ready for you to make a selection
3. Press either UP, DOWN, MUTE, or BYPASS depending on what you would like to do

*NOTE - The Audio Delay can be set anywhere from 90ms to 630ms in increments of 90ms

EDID MANAGEMENT

The AC-MX44/MX88-AUHD has 29 factory defined EDID settings as well as 3 user memories. You can also choose to read the EDID from any OUTPUT. By default, the Matrix Switch is set to a 1080p EDID for maximum plug and play capability. If you are using 4k/UHD sources you will need to define a 4k/UHD EDID on each input (unless you capture the EDID from the display).

To change EDID settings:

1. Press and hold (3 seconds) the button for the INPUT that you would like to change
2. The UP and DOWN buttons will illuminate. Use these to toggle between the different EDID options. These will be shown on the switch's LCD display.
3. Once you find the EDID that you need, press the INPUT button of the source that you would like to apply the EDID to

*NOTE - You may also copy the EDID from any OUTPUT and apply it to any INPUT by selecting "Copy EDID from Output x". This will copy the EDID from the attached display, store it in "USER EDID 1", and apply it to the INPUT that you have selected.

Here is a full list of all available EDID options:

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

CASCADE MODE

Cascade Mode is designed to make HDMI connections go smoother when connecting to repeater devices like AVRs, DAs, HDMI splitters, etc. Cascade Mode can also be used to solve common sync issues such as:

1. Invalid or incorrect EDID from the display
2. Displays that have a hard time changing between resolutions or in and out of HDR mode
3. Flashing and instability from sources or other devices in the system

To use Cascade Mode:

1. Press and hold (3 seconds) INPUT 1 and INPUT 2 at the same time.
2. The LCD screen will say "Cascade Mode ENABLE"
3. Repeat step 1 to disable

IR CONTROL

The AC-MX44/MX88-AUHD comes with a IR remote control. The labels on the left indicate OUTPUTS. Choose the desired output, then the left and right arrows will then cycle through inputs.

There is an IR receiver on the front of the Matrix Switch, but you may need the IR receiver in a different location. Simply plug the IR extension cable into the "IR.ext" port on the rear of the Matrix Switch and position the IR Receiver in a more convenient location.


VCC (+)
GROUND
IR SIGNAL
IR SENSOR

LAN CONTROL
RS232 CONTROL
IR EXTENSION
AUDIO OUTPUT TOS AND ANALOG
12V POWER

HDMI INPUTS
HDMI OUTPUTS
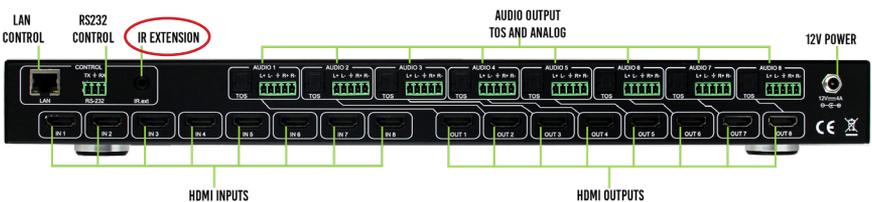
RS232/IP CONTROL

The AC-MX44/MX88-AUHD can be controlled via IP or RS232 commands. If you are going to use RS232, follow the diagram below as a guide when making the cable:

*NOTE - See the owner's manual for a full list of control commands

IN ORDER TO CONNECT YOUR COMPTER TO THE SWITCH BY RS-232 YOU NEED TO MAKE YOUR OWN CABLE WITH ONE END A PHOENIX CONNECTOR AND THE OTHER END A RS-232 PORT. YOUR COMPUTER DOESN'T HAVE A RS-232 INPUT, GET A USB CONVERTER (AS SHOWN BELOW), AND PLUG THE USB END TO ANY COMPUTER
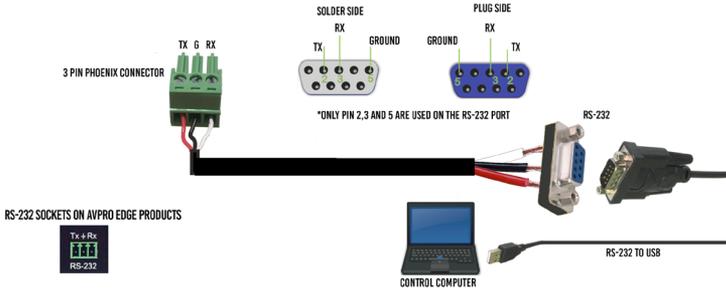
WEB INTERFACE

Along with the front panel controls, you can also control the Matrix Switch with a web interface. The advantage of using the web interface is that you have access to more features in the Matrix Switch than you would by only using the front panel controls such as Image Enhancement, access to a Test Pattern Generator, and HDBaseT compatibility mode. See the owner's manual for the specifics.

To connect to the Matrix Switch and access the Web interface:

1. Connect the LAN port on the rear of the Matrix Switch into an active access point or router
2. Make sure your computer is on the same network
3. Open any web browser and type in the IP address of the Matrix Switch. *NOTE - The default IP address is 192.168.1.239

Once connected, the web interface will look like this →

Across the top of the page you will see different tabs for Sense Switching (HDMI Matrix), Video Setting, HDCP Config, Audio Setting, Audio Matrix, EDID Manage, and System Settings. Simply choose the tab that corresponds with what you would like to configure. The rest is a matter of you choosing what you would like the switch to do. All of the different functions (plus a few more) of the Matrix Switch we've described so far in this Quick Start Guide can be done easily in the web interface.

Here is an example of the EDID Manage tab:

As you can see, the web interface was designed with simplicity in mind. Most integrators find the web interface to be very easy to use and prefer setting up the Matrix Switch this way every time. Please see the owner's manual for a full description of each tab and function in the web interface.

*NOTES
- You can use DHCP on the Matrix Switch. Turn on DHCP by pressing and holding (3 seconds) INPUT 1 and INPUT 4 together
- You can always check the switch's IP address by pressing and holding the (3 seconds) INPUT 3 and INPUT 4 buttons on the front panel

PC SOFTWARE

Much like the web interface, the Matrix Switch can also be configured and controlled with software. This software is free and can be downloaded from our website.

To use the PC software:

1. Download the software from our website. Check your specific product's page, scroll to the bottom, locate "Resources", click "PC Software"
2. Connect the switch to your laptop using RS232
3. Open the software. It will look like this →
4. Click "Turn on Port"
5. Click "Search Machine"
6. You should now be connected. If not, be sure that the right COM port is selected.
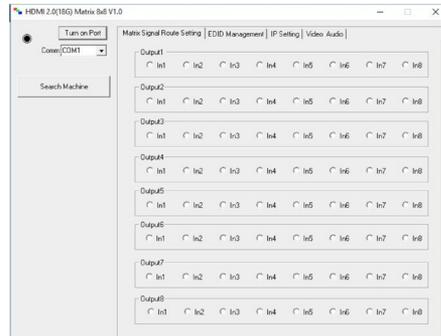
Across the top of the page you will see different tabs for Matrix Signal Route Setting, EDID Management, IP Setting, and Video Audio. Simply choose the tab that corresponds with what you would like to configure, then rest is a matter of you choosing what you would like the switch to do. Please see the owner's manual for a full description of each tab and function in the PC software.

TROUBLESHOOTING

Having problems? Here are some general troubleshooting steps that may help:

1. HDMI sync issues? Try cascade mode
2. Missing part of the audio with Extracted Audio? Be sure that the audio output of the source is set to 2ch PCM
3. Factory reset - On the front panel, press and hold (10 seconds) the following buttons:
   a. HD - 4K b. 4K - HD c. MUTE d. BYPASS
4. Not sure if the signal is getting through the system? Check by using the built in test pattern
   a. Press and hold (3 seconds) the desired INPUT and OUTPUT buttons simultaneously
   b. Repeat to turn the test pattern off
5. Is the switch connected to a large or non-standard network? Turn on DHCP by pressing and holding (3 seconds) INPUT 1 and INPUT 4 together

HAVE A QUESTION OR NEED ASSISTANCE?
DON'T HESITATE TO CONTACT US!

SUPPORT: +1 605-274-6055
USA TOLL FREE: 877-886-5112
EMAIL: SUPPORT@AVPROEDGE.COM

DRIVERS ARE AVAILABLE AT
WWW.AVPROEDGE.COM/DRIVERS

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