



# 4x2 HDMI 2.0 Matrix User's Guide



P/N:Matrix42-HD20

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## **Important Safety Notices**

Please read safety instructions carefully before installation and operation.

- Please pay close attention to all warnings and hints for this device
- Do not expose this unit to rain, heavy moisture, or liquid
- Do not put any items into the device or attempt to modify its operation
- Do not repair the device or open the enclosure without professional guidance to avoid electric shocks. Doing so may void your warranty
- Keep the product in a well-ventilated location to avoid damage from overheating
- Shut off power and make sure environment is safe before installation
- Do not plug the HDMI cables in/out when the device is in use to avoid cable damage. Make sure they are plugged into the correct ports
- Use the included 5VDC power adapter only. Make sure the specification matches if using 3rd-party DC power adapters

## Introduction

The 4x2 HDMI 2.0 Matrix allows you to select and switch between any of the 4 HDMI source devices to display on any of the 2 HDMI outputs.

## Features

- Connect up to four HDMI source devices and independently switch any source to any of the two HDMI displays
- Supports up to 4K@60Hz YUV 4:4:4, HDR (4K@60Hz YUV 4:2:0 10-bit), HDMI 2.0 and HDCP 2.2/1.4, 18Gbps
- Includes SPDIF Toslink and analog audio extraction
- Supports HD digital audio, SPDIF Toslink, Analog, LPCM 7.1, 24-bit, 96KHz, Dolby Atmos, and DTS-X
- Supports CEC
- Supports ARC via Toslink output
- Control methods: Panel buttons, IR remote, Web GUI, command control
- EDID management: Mixed EDID, EDID copy, Built-in EDID

## Installation Requirements

- HDMI source devices (DVD player, set top box, PC, etc.)
- HDMI displays (SDTV/Monitor, HDTV/Monitor, projector, etc.)
- HDMI cables (not included)

## Package Contents

- 4x2 HDMI 2.0 Matrix
- IR remote control
- USB Type-A to Micro B cable
- Power adapter (5VDC)
- User's guide

## Product Layout

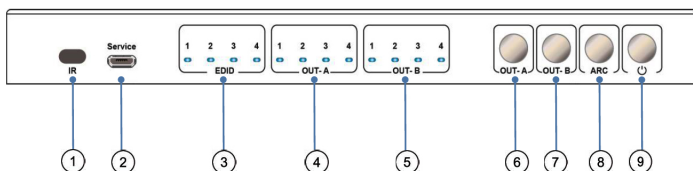


Figure 1: Front Panel Layout

1. **IR In:** Receives IR signals from the included remote control
2. **Micro USB:** Command control and firmware update port
3. **EDID:** Displays the EDID
4. **HDMI Out A LED:** Solid on indicates the selected source device. Flickering when EDID modification mode is enabled
5. **HDMI Out B LED:** Solid on indicates the selected source device. Flickering when EDID modification mode is enabled
6. **HDMI Out A Select:** Quick press to select HDMI source. Press and hold for 3 seconds to enter EDID mode. Quick press to modify EDID when in EDID mode

7. **HDMI Out B Select:** Quick press to select HDMI source. Press and hold for 3 seconds to enter EDID mode. Quick press to modify EDID when in EDID mode
8. **ARC:** ARC is disabled by default. Press the button to enable/disable ARC
9. **Power Button:** Powers on/off the Matrix. Quick press places the Matrix in standby mode  
**Note:** To reset the Matrix, unplug the power cable, hold down the power button and re-plug the power cable. When all LED indicators begin flashing, release the power button

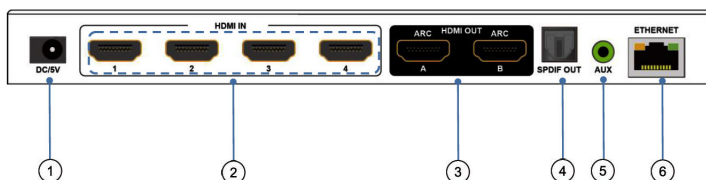


Figure 2: Rear Panel Layout

1. **Power Jack:** Connects to the included power adapter
2. **HDMI In (1-4):** Connects to your HDMI sources
3. **HDMI Out (A/B):** Connects to your HDMI displays
4. **SPDIF Out:** Connects to your Optical speakers or AVR
5. **Analog Out:** 3.5mm jack connects to your stereo speakers/headphones
6. **RJ45:** Connects to your PC for device control

## Hardware Installation

1. Power off all devices including your HDMI source(s) and HDMI display(s).
2. Connect your HDMI source devices to the Matrix's HDMI In connectors with HDMI cables (HDMI cables not included).
3. Connect your HDMI displays to the Matrix's HDMI Out connectors with HDMI cables (HDMI cables not included).
4. Optional: Connect an AVR amplifier or speakers to the SPDIF output port or analog output port.
5. Optional: Connect a CAT cable between the Matrix's RJ45 port and router or PC's ethernet port. This connection is needed only if Web control through a PC is required.
6. Plug the included power adapter into the Matrix's Power Jack, then plug the power adapter into a reliable power outlet.
7. Power on all connected devices. The Matrix is ready for use.

## Application Diagram

The application diagram shows the most typical input and output devices used with the 4x2 HDMI 2.0 Matrix.

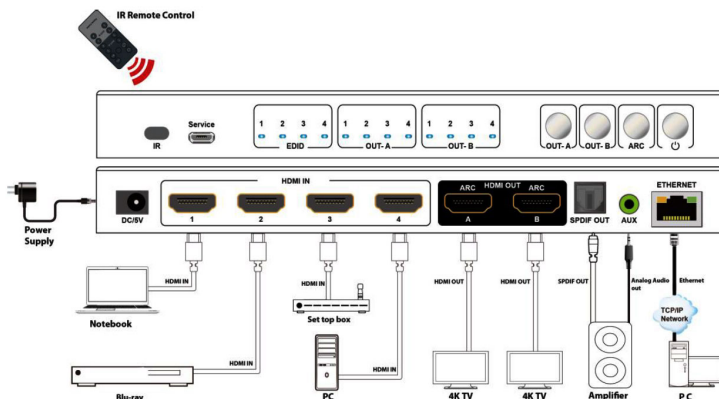


Figure 3: Application Diagram

## ARC Application

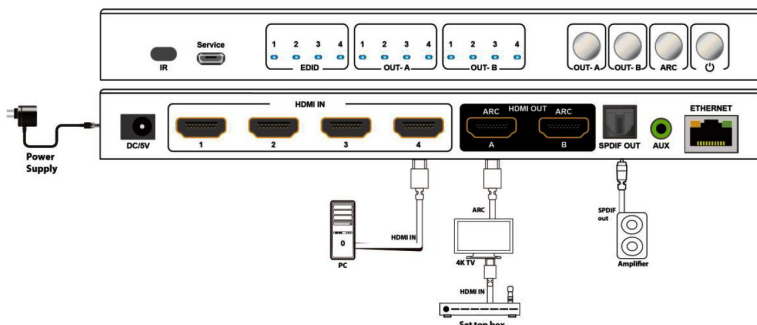


Figure 4: ARC Application Diagram

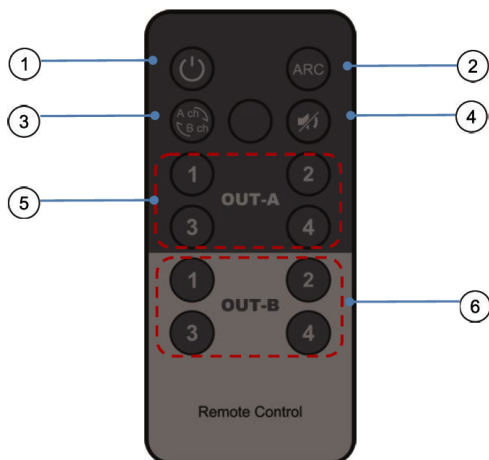
### Notes:

- ARC: ARC equipped display/sink required
- CEC: Supports TV Power on/Standby modes

# Matrix Device Control

## Remote Control

Users can control the 4x2 HDMI 2.0 Matrix using the included IR remote. Point the remote control towards the Matrix's IR In window located on the front panel.

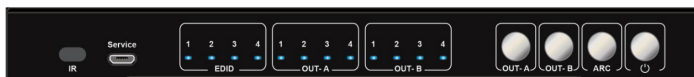


1. **Power On/Standby:** Press to turn on or place the Matrix into standby mode
2. **ARC:** Turn ARC On/Off
3. **Audio Extraction:** Press to switch audio extraction
4. **Mute:** Turns audio On/Off
5. **HDMI Out A:** Press to select HDMI source to display on HDMI Out A
6. **HDMI Out B:** Press to select HDMI source to display on HDMI Out B



## EDID Management

Allows you to read and configure the EDID for each input. Supports Built-in, Mixed EDID (default), and EDID copy modes.



EDID groups	EDID instruction
0000	Mixed EDID (Default)
0001	1920*1200 60Hz 2CH
0010	1080P 60Hz 2CH
0011	1080P 60Hz 6CH
0100	1080P 60Hz 8CH
0101	4K 60Hz 420 2CH
0110	4K 60Hz 420 6CH
0111	4K 60Hz 420 8CH
1000	4K 60Hz 444 2CH
1001	4K 60Hz 444 6CH
1010	4K 60Hz 444 8CH
1011	4K/60Hz 422 HDR 10bit 2CH
1100	4K/60Hz 422 HDR 10bit 6CH
1101	4K/60Hz 422 HDR 10bit 8CH
1110	COPY HDMI Out A
1111	COPY HDMI Out B

**EDID Table**

## EDID Indicator

LED OFF represents 0 and LED ON represents 1.




## EDID Configuration Mode Setup

The Matrix's default EDID is Mixed EDID (0,0,0,0). Do Not make any changes if the default EDID works properly.

1. Press the HDMI Out A button for 3 seconds to enter EDID configuration mode. Release the button when the HDMI Out A LEDs begin to flicker.
2. Quick press the HDMI Out B button to toggle between HDMI In 1/2/3/4 for EDID modification. Please see HDMI Out A LED for HDMI In selection.
3. Quick press HDMI Out A button to choose one of the 16 EDID settings (see table on page 9). Please refer to the EDID indicator for the proper setting.
4. Press the HDMI Out A button for 3 seconds or wait 10 seconds to save your changes and exit EDID mode.

## RS-232 Command Control

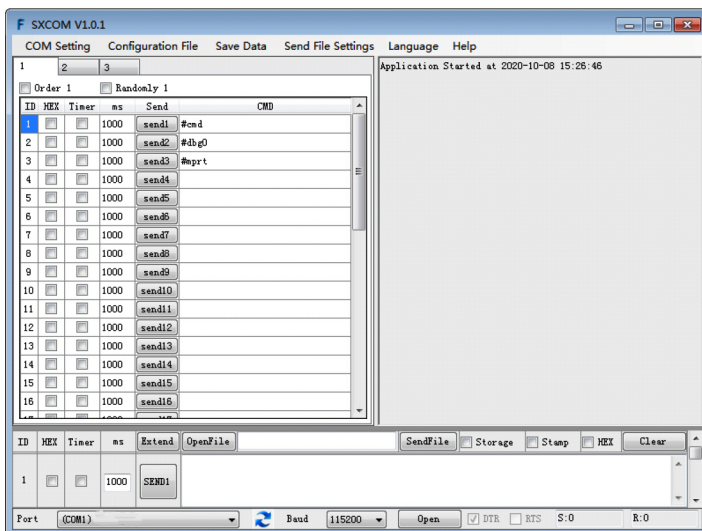
1. Connect the 4x2 HDMI 2.0 Matrix to the PC using the included USB Type-A to Micro B cable.
2. Download SXSCOM software at [www.gofanco.com/downloads](http://www.gofanco.com/downloads), and install it onto your computer.
3. Double click the SXCOM icon  to open the program.

### COM Port Setting

Baud Rate:	115200 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit

### Port Command Window

Enter the port command and click Send.



## Command List

- All commands start with, "#", "%c" (command head), "d" (parameters), "I" (lock), "s" (save)
- The underline "\_" can not be omitted.
- A space is required between Command, Parameter 1, Parameter 2, and Attribute Parameter.
- The "/" means the parameter is not used.

The table is an example of a list of commands

Command	Command Head	Parameter 1	Parameter 2	Attribute Parameter	Attribute Parameter
Video switch	#video_%c	out%d	/	matrix=%d	onoff=%d
Audio switch	#audio_%c	in%d	/	arc=%d	dec=%d
EDID select	#edid_%c	in%d	/	mode=%d	data=%d

## Command Examples

- Switch HDMI Out A to HDMI Input 1  
Format: #video\_d out1 matrix=1
- Open ARC for HDMI Out A:  
Format: #audio\_d arc=1
- Select Mixed EDID for all inputs  
Format: #edid\_d in0 data=0

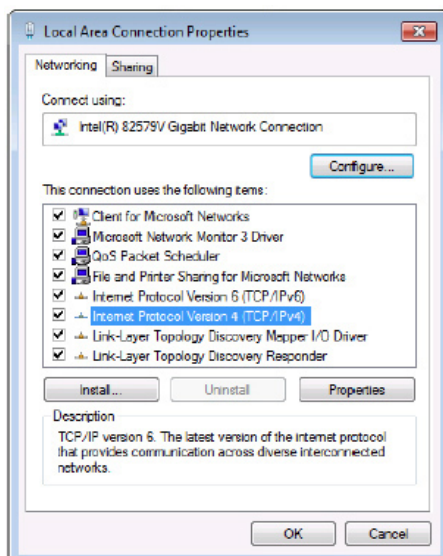
## Web Control

### Default IP Address

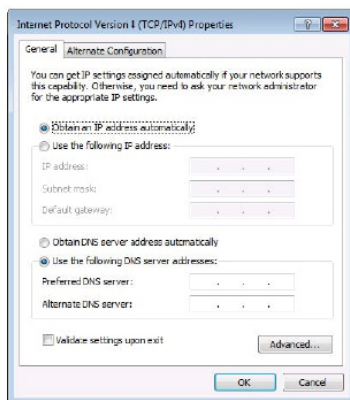
The default IP address of the Matrix is 192.168.1.168.

### Change the IP address of our PC

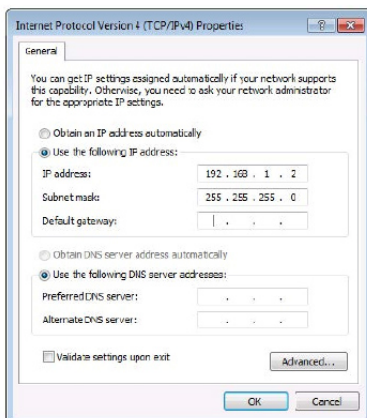
1. Connect the Matrix and your PC to the LAN.
2. Configure your PC as follows:
  1. Click Start / Control Panel / Network and Sharing Center.
  2. Click Change Adapter Settings.
  3. Highlight the network adapter you want to use to connect to the device and click **Change settings of the connection**.
3. Highlight **Internet Protocol Version 4 (TCP/IP/4)**.



4. Click **Properties**.



5. Select **Use the following IP Address**, and then enter the IP address. **Note:** You can use any IP address in the range: 192.168.1.2 to 192.168.1.254 (excluding 192.168.1.168).



6. Click **OK** to save the changes.

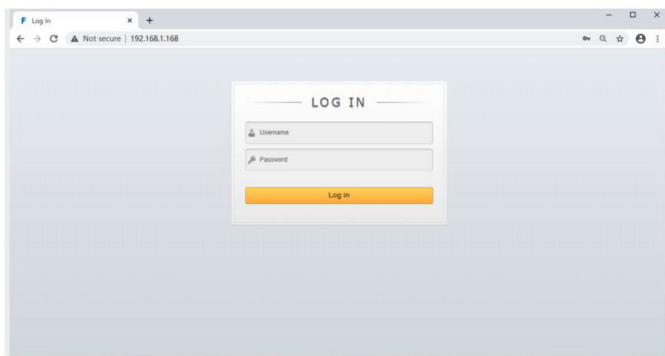
7. Click **Close** to exit.

## Web Browser Control

Open your web browser and enter the Matrix IP address 192.168.1.168 into the address bar, and press **Enter**.

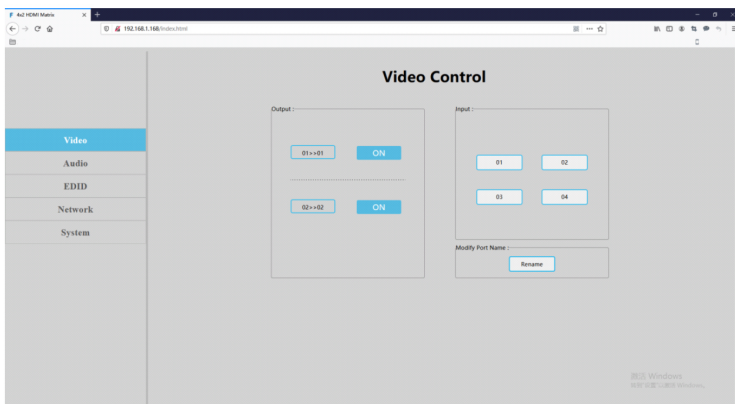
## Log In

Type in user name and password, both "admin", at the login screen.



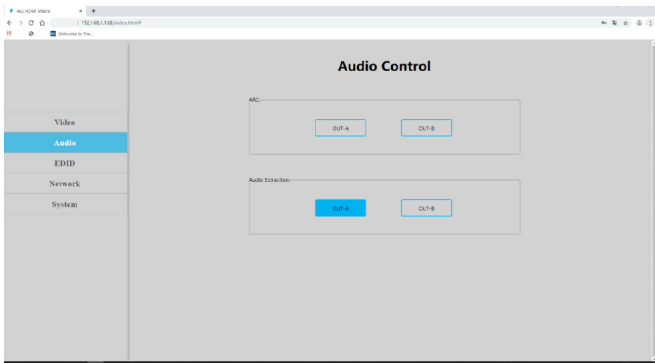
## Video Control

Used to switch inputs, change port name, etc.



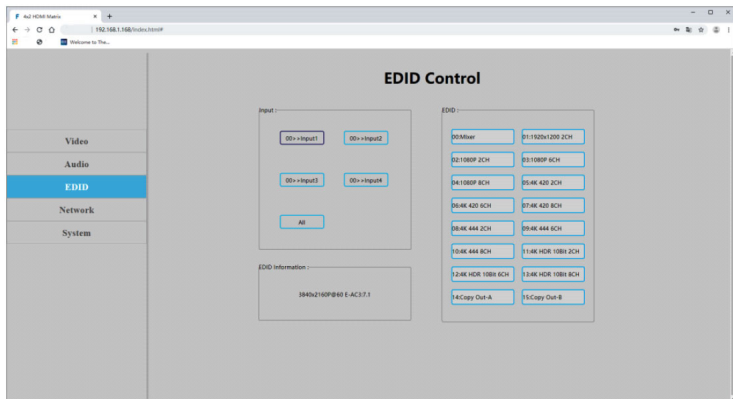
## Audio Control

Set ARC operation and audio extraction.



## EDID Control

Set the EDID for the HDMI Inputs.





## Network Control

Enter the network setting, and enable DHCP.

The screenshot shows a web browser window with the address bar displaying '192.168.1.100/index.html'. The page title is 'Welcome to This...'. On the left side, there is a vertical navigation menu with buttons for 'Video', 'Audio', 'EDID', 'Network' (which is highlighted in blue), and 'System'. The main content area is titled 'Network Information'. It contains the following fields and controls:

- Mac Address: 4658-4E1E-58A8 (displayed in a read-only box)
- IP Address: 192.168.1.108 (input field)
- Net Mask Address: 255.255.255.0 (input field)
- Gate Way Address: 192.168.1.1 (input field)
- DHCP: A toggle switch currently set to 'OFF'.
- An 'Apply' button at the bottom right.

## System Setting

Change user name, password, factory reset, reboot.

The screenshot shows a web browser window with the address bar displaying '192.168.1.100/index.html'. The page title is 'Welcome to This...'. On the left side, there is a vertical navigation menu with buttons for 'Video', 'Audio', 'EDID', 'Network', and 'System' (which is highlighted in blue). The main content area is titled 'System Setting'. It contains the following sections and controls:

- System Setting:** A box containing two buttons: 'Reboot' and 'Factory'.
- Change Password:** A box containing three input fields: 'User Name' (with 'admin' entered), 'New Password', and 'Confirm the Password'.
- Version:** A section showing 'MCU Ver:V0.0.0' and 'Web Ver:V0.0.0'.
- An 'Apply' button at the bottom right.

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