

VEO-MXH88D

SWITCHES & MATRIXES

HDMI 2.0 8x8 18Gbps Matrix with Audio De-embedders



USER MANUAL



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1. PRECAUTIONS

1.1 Important Remark



WARNING: SHOCK HAZARD - DO NOT OPEN

AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING (If applicable): The terminals marked with symbol of “⚡” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.


WARNING: A device with Class I construction shall be connected to a mains socket-outlet with a protective earthing connection.



WARNING: This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment centre.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.


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1.2 Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other device (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the device.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the device during lightening sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Disconnecting from mains: When switching off the POWER switch, all the functions and light indicators of the unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket. For this reason, it always shall remain easily accessible.
15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.
16. The marking information is located at the bottom of the unit.
17. The device shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on device.

1.3 Cleaning



Clean the unit with a soft, dry clean cloth or slightly wet with water and neutral liquid soap only, then dry it with a clean cloth. Be careful that water never gets into the unit through any hole. Never use alcohol, benzine, solvents or abrasive substances to clean this unit.

NEEC AUDIO BARCELONA, S.L. accepts no liability for any damage that may be caused to people, animal, or objects due to failure to comply with the warnings above.



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Thank you for choosing our device Ecler VEO-MXH88D!
We appreciate your trust.

It is **VERY IMPORTANT** to carefully read this manual and to fully understand its contents before any connection in order to maximize your use and get the best performance from this equipment.

To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.

All ECLER products are covered by warranty, please refer to www.ecler.com or the warranty card included with this product for the period of validity and conditions.

2. PACKAGE CONTENTS

- 1x VEO-MXH88D.
- 1x 12V/ 3A DC power supply.
- 1x Remote control.
- 1x IR Ext RX Cable.
- 17 x 3 pin Euroblock connector for RS-232 and audio extraction.
- First Steps Guide.
- Warranty card.

3. DESCRIPTION & FEATURES

VEO-MXH88D is an 8x8 HDMI 2.0 matrix designed to handle high-quality video and audio signals. It supports up to 4K/UHD video resolution at 60 Hz with 4:4:4 chroma sampling. VEO-MXH88D offers 8 analogue audio inputs and 16 analogue and digital audio de-embedding outputs, allowing for flexible audio management. The device features EDID management, which ensures optimal compatibility between connected devices, an LCD display and an integrated WebGUI, providing a user-friendly interface for configuration and control of the unit as well as, multiple other options for addressing HDMI sources, including the frontal panel's selection buttons, serial commands, TCP/IP, and IR (infrared) control. The VEO-MXH88D is compliant with HDCP 2.2 and 1.4. This makes it suitable for professional applications that require secure handling of video and audio signals. Furthermore, supports for up to 8 presets allows for quick and convenient recall of specific configurations.



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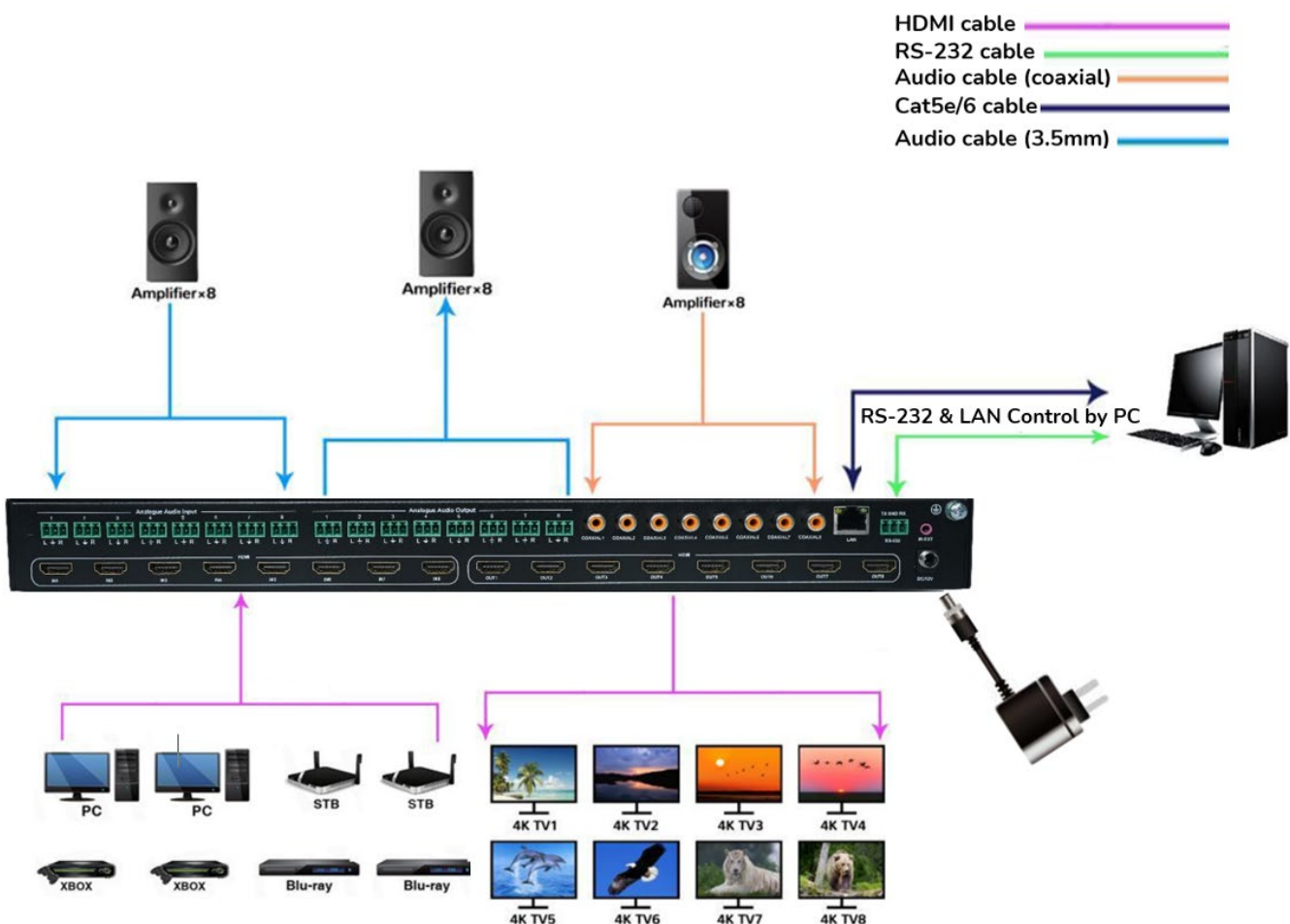
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3.1 Main Features

- 8 HDMI 2.0 inputs and 8 HDMI 2.0 outputs for flexible signal routing.
- Supports 4K @60Hz, 4:4:4 chroma sampling, and HDR (4K @60Hz, 4:2:0 10-bit).
- Stores up to 8 presets for easy configuration recall.
- Supports audio formats like Dolby TrueHD, Atmos, DTS-HD Master Audio, and DTS:X.
- Allows analog audio insertion/extraction and digital audio extraction.
- Control options include front panel buttons, IR remote, RS-232, IP control, and WebGUI.
- Advanced EDID management, CEC, and ARC capabilities.
- HDCP 2.2 compliant for secure content transmission.
- Comes with a 12V DC power supply.

4. INSTALL & CONNECT



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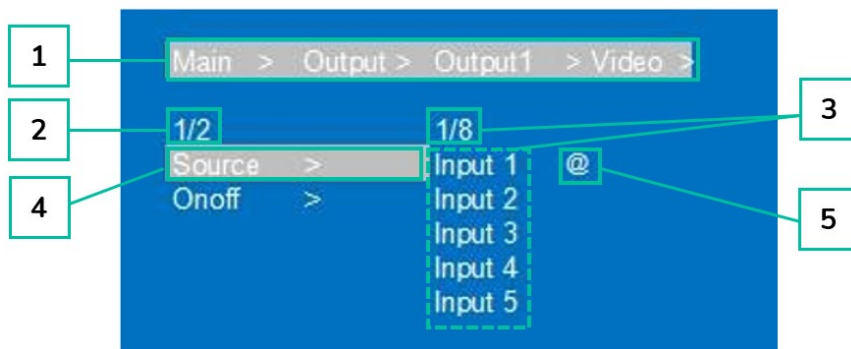
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The unit can be controlled and configured by following the steps indicated below. In addition, if you prefer, it can also be configured by the [WebGUI](#).

5.1 LCD Display control menu

- To operate through the different menus, please use:
 - **UP/DOWN** buttons of the front panel or ▲/▼ buttons of the Remote Control to select the item.
 - **ENTER** button of the front panel to accept or ► button of the Remote Control. The selected item will be highlighted in white.
 - **MENU** button of the front panel to go back or ◀ button of the Remote Control.

- **Display Information**



1. At the top of the screen, all the menus and submenus you have selected to reach the current screen are displayed. It is very useful to always know which menu you are in.
2. Numbers on the left side of the screen: the first digit indicates the current position of the selected item among the total available items for the selected menu. The second digit indicates the total available items for the selected menu.
3. Numbers on the right side of the screen: the first digit indicates the current position of the selected option among the total available options for the selected item. The second digit indicates the total available options available for the selected item.
4. Selected Menu or item will be highlighted in white.
5. The @ symbol appears next to the selected option value as a confirmation of the selection.

5.2 Video Switching Control

The signal switch includes **8 free switching channels**, which **can be configured as input/output** according to the requirements, forming a matrix of $1 \times 8 \sim 8 \times 1$, which can switch any input. Signal to 1 channel output or all channel output.

Output	1	2	3	4	5	6	7	8
Input	1	2	3	4	5	6	7	8

- **To switch input channel to the output**, select the "output channel" + "input channel".
 1. Press the desired output channel selection.
 2. Press the desired input channel that you want to associate with the selected "output channel".
- **To assign an input channel to more than one output channel**, follow these steps:
 1. Press one by one the output channels that you wish to perform a switch on.
 2. Press the desired input channel that you want to associate with the selected output channels.
- **To assign an input channel to all output channels**, follow these steps:
 1. Long press any output channel.
 2. Press the desired input channel that you want to associate with all output channels.

Or

 3. Long press the desired input channel that you want to assign to all the output channel.



Examples:

- Switch output 1 to input 4
Operation: press output1 and then input4 to complete switch
- Output 2, 1, 3 switch to input 2
Operation: press output 2, 1, 3 and then input 2 to complete switch
- All output switch to input 4
Operation: long press any output and then long press input 4 to complete switch.



If time between pressings exceeds 10s, it will be necessary to **press output button again**.



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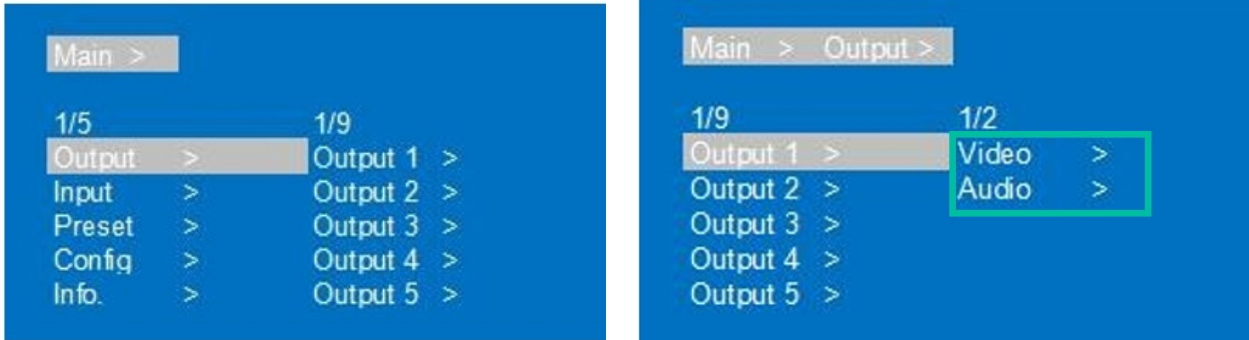
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5.3 Output Signal Control

This section allows to **control the Output signal (Audio or Video) of each one of the 8 output signals.**

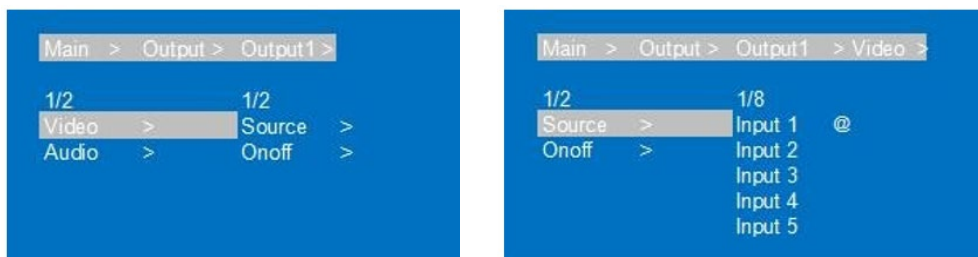


5.3.1 Output Video Control

This section allows to **operate the output video features of each one of the 8 output signals.**

5.3.1.1 Switching

Switch any output to one input or switch all outputs to one input. By default, 8x8 matrix, 8 inputs and 8 outputs, one to one output.



1. Select **“Output”** in the menu and press **“ENTER”**.
2. Then use **“UP/▲ or DOWN/▼”** button to **select “output 1~8” or “All”** (“All” means all outputs). The selected output will be highlighted in white.
3. Press **“ENTER”** enter next page.
4. Press **“UP/▲ or DOWN/▼”** button to select **“Video”**, press **“ENTER”**.
5. Press **“UP/▲ or DOWN/▼”** button to select **“Source”**, press **“ENTER”**.
6. Press **“UP/▲ or DOWN/▼”** button to select **“Input 1~8”**, press **“ENTER”**. Switch is done.

5.3.1.2 On/Off

Video signal can be switched on and off on any output selected. By default, the output video is set to be active.



1. Select **“Output”** in the menu and press **“ENTER”**.
2. Then use **“UP/▲ or DOWN/▼”** button to select **“output 1~8”** or **“All”** (“All” means all outputs). The selected output will be highlighted in white.
3. Press **“ENTER”** enter next page.
4. Press **“UP/▲ or DOWN/▼”** button to select **“Video”**, press **“ENTER”**
5. Press **“UP/▲ or DOWN/▼”** button to select **“Onoff”**, press **“ENTER”**.
6. Finally, press **“UP/▲ or DOWN/▼”** button to choose **“On”** or **“Off”**, and press **“ENTER”** to confirm your choice.
7. The **@ symbol** appears next to the selected value as a confirmation of the selection.



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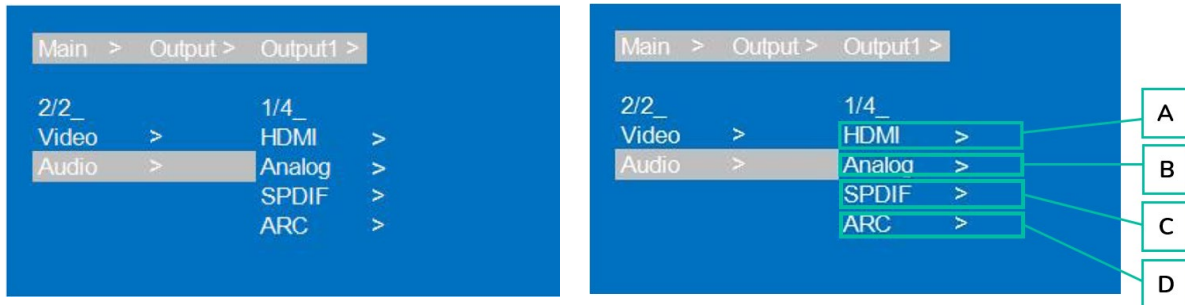
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5.3.2 Output Audio Control

This section allows to operate the output audio features of each one of the 8 output signals.



1. Select **“Output”** and press **“ENTER”**.
2. Press **“UP/▲ or DOWN/▼”** button to select **“Output1~8”** or **“All”** (“All” means all outputs). The selected output will be highlighted in white.
3. Press **“ENTER”**.
4. Press **“UP/▲ or DOWN/▼”** button to select **“Audio”**, press **“ENTER”**.
5. Press **“UP/▲ or DOWN/▼”** button to select the item you want to adjust.
 - A. HDMI
 - B. Analog
 - C. SPDIF
 - D. ARC: Audio Return Channel. Off by default.
6. Press **“ENTER”**.
7. Press **“UP/▲ or DOWN/▼”** button to choose **“On”** or **“Off”**, and press **“ENTER”** to confirm your choice.
8. Press **“MENU”**, to return to the previous menu, and then press **“UP/▲ or DOWN/▼”** button to select the other items and proceed in the same way as explained above.
9. The **@** symbol appears next to the selected value as a confirmation of the selection.

5.3.3 HDMI audio

HDMI audio support PCM2.0-7.1/32-192KHZ/16-24bit, Dolby/DTS/Dolby Atmos/DTS-HD, and maximum 7.1 channels, but the supported audio format, channel, and sampling rate depend on the EDID.

5.3.4 Audio extraction

Analogue audio only support PCM2.0, 32-192KHZ, 16-24BIT; S/PDIF audio output support PCM/Dolby/DTS, 32-96KHZ, 16-24bit, maximum 5.1 channels

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- **Analogue audio extraction**

- When the 8×8 matrix is selected for one-to-one output, the analog audio output can only output the audio of the port.
- When the HDMI output port is muted, coaxial and analog audio output will not be affected.
- Analog audio only support PCM2.0, otherwise Auto-Mute.
- Analog audio left and right channels cannot be reversed output.
- Analog audio will Auto-Mute when digital audio input.

- **SPDIF audio extraction**

- When the 8×8 matrix is selected for one-to-one output, the coaxial audio output can only output the audio of the port.
- When the HDMI output port is muted, coaxial and analog audio output will not be affected.

5.3.5 Audio embedded

8×Analogue audio support embedded, LINE IN1~8 correspond HDMI IN1~8 ; Analogue audio only support PCM2.0 format audio. After the audio embedding function is turned on, embedded audio can be output through HDMI/analog/SPDIF ports.

5.3.6 ARC audio

Supports output 1~8 audio transmission back to SPDIF 1~8 and PCM/DTS/DOBLY audio format.

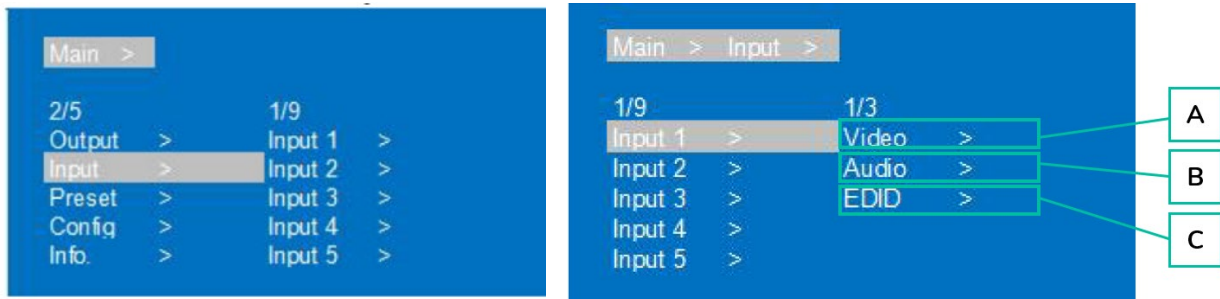


HDMI source and TV both need support CEC, TV also need support ARC. You need to turn on the TV and HDMI source CEC and ARC functions.

1. Connect the HDMI source to the TV.
2. Connect the HDMI ARC port to the output 1-8.
3. Use a coaxial cable to connect the power amplifier to SPDIF port (correspond HDMI ARC output).
4. Turn on device's ARC function by panel button/command/WEB.

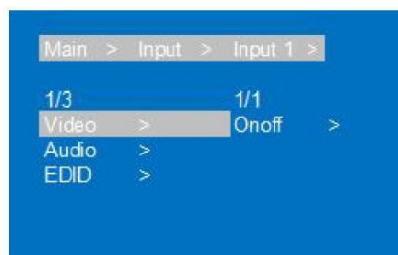
5.4 Input Signal Control

This section allows to **operate the input signal features of each one of the 8 input signals.**



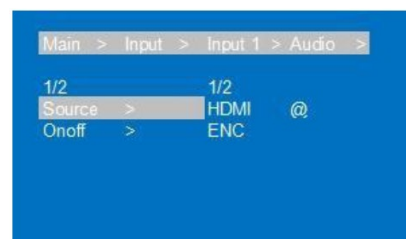
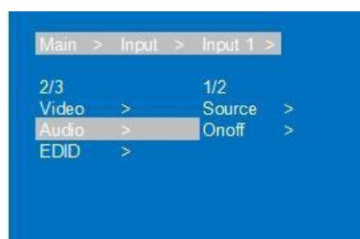
1. Select **"Input"** and press **"ENTER"**.
2. Press **"UP/▲ or DOWN/▼"** button to **select "Input1~8"**. or **"All"** ("All" means all inputs). The selected input will be highlighted in white. Press **"ENTER"**.
3. Press **"UP/▲ or DOWN/▼"** button to select **"Video"**, press **"ENTER"**.
4. Press **"UP/▲ or DOWN/▼"** button to **select the item you want to adjust.**

A. Video: Select Yes or No to turn on/off input video settings.

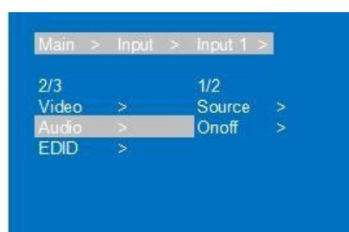


B. Audio: allows to select:

- **Source:** To choose HDMI input audio or ENC (Audio Insertion).



- **Onoff:** to choose On or Off input audio.



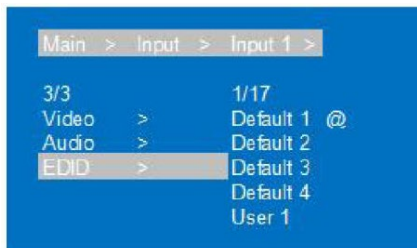
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C. **EDID:** to set each input's EDID


This parameter allows **to manage EDID settings**.

- Default 1:** 4K@60Hz 444-LPCM: 2.0, HDR:HLG
- Default 2:** 4K@60Hz 420-LPCM: 2.0, HDR:None
- Default 3:** 4K@30Hz 444-LPCM: 2.0, HDR:None
- Default 4:** 1080p@60Hz 444-LPCM: 2.0, HDR:None

 The **default EDID is "Default1"**.



1. Press **"UP/▲ or DOWN/▼"** button to **adjust the selected item** according to your choice.
2. Press **"MENU"**, to **return to the previous menu**, and then press **"UP/▲ or DOWN/▼"** button to **select the other items**. Press **"ENTER"**.
3. Press **"UP/▲ or DOWN/▼"** button to adjust the selected item according to your choice.
4. The **@ symbol** appears next to the selected value as a confirmation of the selection and **EDID details (Name, Max resolution, audio format, soundtrack)** will appear next to the chosen option.


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5.5 Preset Scene Settings

This section enables to **save Video, Audio, EDID and System settings into 8 different presets to effectively manage and customize your own settings.**

Following actions can be performed for each preset:

- **Clear:** Delete a saved preset to free up the preset slot for future use.
- **Save:** Save the current state of video, audio, EDID, system settings, etc., as a preset. You can save up to 8 presets.
- **Call:** Recall a previously saved preset to restore the saved state of video, audio, EDID, system settings, etc.



Presets can be selected or changed by [Front Panel buttons](#) or by [WebGUI](#).



The **default preset is same as the factory setting (PTP).**

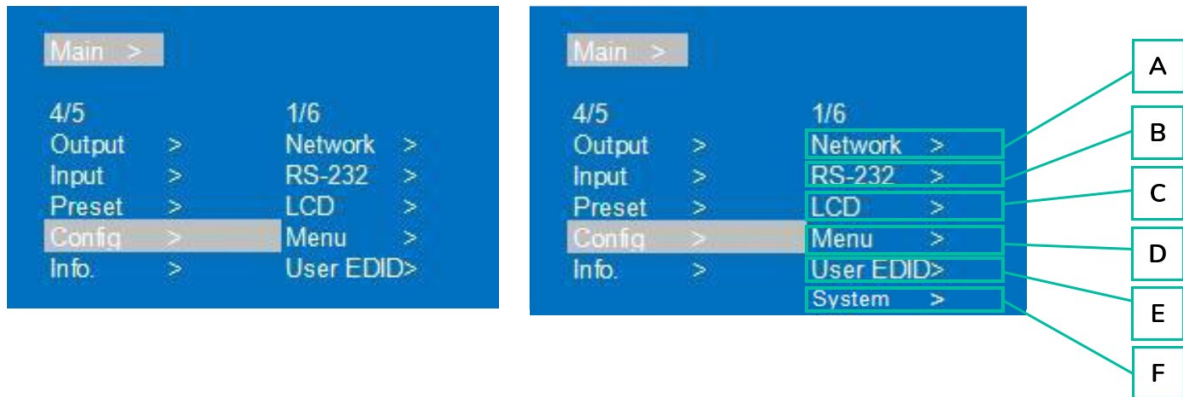


1. Select "Preset", press "ENTER", then select the preset **Scene** interface.
2. **To recall a preset**, choose "Call" and select the desired Preset1~8. Press "ENTER" to confirm.
3. **To save the current configuration as a preset**, select "Save" and choose one of the Preset1~8 options. Press "ENTER" to save.
4. **To clear a preset and restore it to the default settings**, select "Clear" and choose the desired Preset1~8. Press "ENTER" to confirm.



5.6 Configuration

This section allows to set the device's Network parameter, RS-232 baud rate, LCD screen, Menu, User EDID and System parameters as well.



A. Network

Allows to set following Network parameter settings:

- **DHCP:** Off (Static) by default. After turning on (Dynamic), IP/MASK/GW are unable to set.
- **IP:** IP address by default 192.168.1.168
- **MASK:** by default, 255.255.255.0
- **GW:** by default, 192.168.1.1
- **PORT:** TCP&UDP port, by default TCP 5000, UDP 5001.
- **DNS:** by default, 144.144.144.144 (unalterable).
- **MAC:** display the Mac address.



To set each one of the Network parameters:

1. Select "Config", press "ENTER".
2. Press "UP/▲ or DOWN/▼" button to select "Network", press "ENTER".
3. Press "UP/▲ or DOWN/▼" button to select:
 - **DHCP:** can choose between "Yes/No" to turn on/off DHCP.



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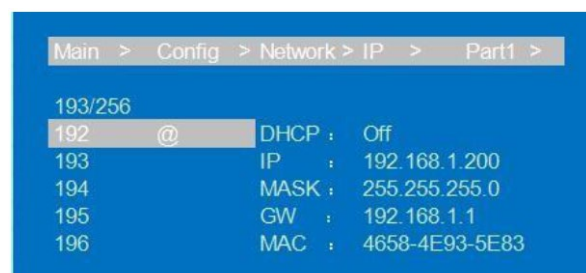
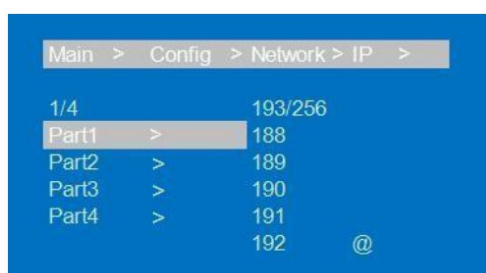
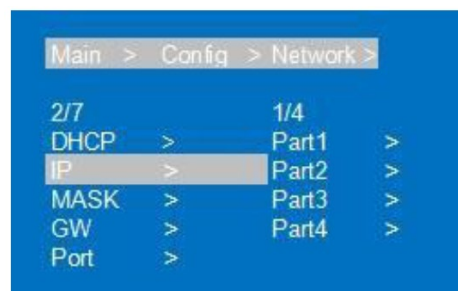
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- **IP:** select IP and then, enter and select Part 1~4, then set IP address parameters for each part.
 - **MASK:** select MASK and then enter and select Part 1~4, then set MASK address parameters for each part.
 - **GW**
 - **PORT**
 - **DNS**
 - **MAC**
4. Press “ENTER”, and the current network parameters will be displayed.
 5. Press “MENU”, to return to the previous menu, and then press “UP/▲ or DOWN/▼” button to select the other items. Press “ENTER”.
 6. Press “UP/▲ or DOWN/▼” button to adjust the selected item according to your choice.
 7. The @ symbol appears next to the selected value as a confirmation of the selection.



B. RS-232

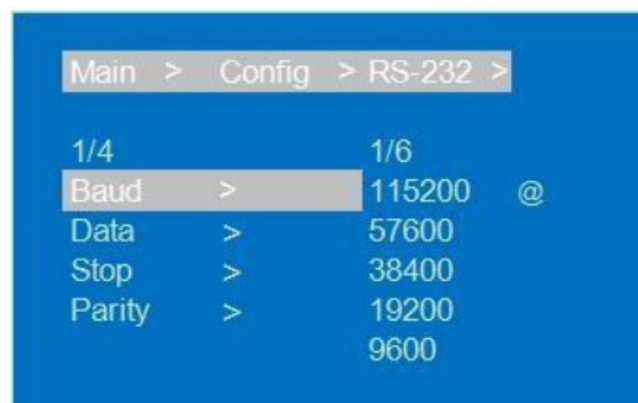
Allows to **change device's baud rate**.

- **Baud:** device's baud rate provide 6 choices, 115200, 57600, 38400, 19200, 9600, 4800. The device is 115200 by default.
- **Data/Stop/Parity:** is used only for view and cannot be changed unless use the highest account.

! **Data/Stop/Parity** are used for checking only and they cannot be set. The underscore show that these parameters cannot be set.



1. Select “Config”, press “ENTER”.
2. Press “UP/▲ or DOWN/▼” button to select “RS-232”, press “ENTER”.
3. Press “UP/▲ or DOWN/▼” button to select “Baud”, press “ENTER”.
4. Press “UP/▲ or DOWN/▼” button to select Baud rate you need, press “ENTER”.
5. The @ symbol appears next to the selected value as a confirmation of the selection.

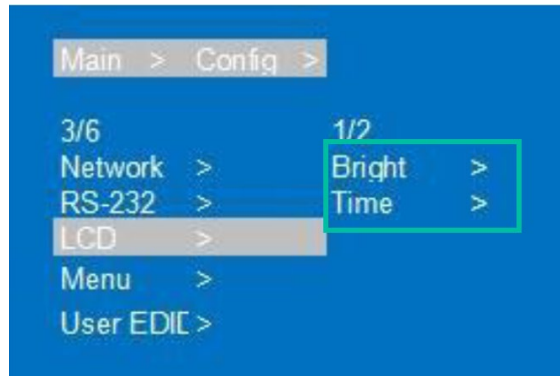


C. LCD

Allows to set LCD screen's Bright and Screen rest time.



Bright is 8 by default and Screen rest time is 30S by default.

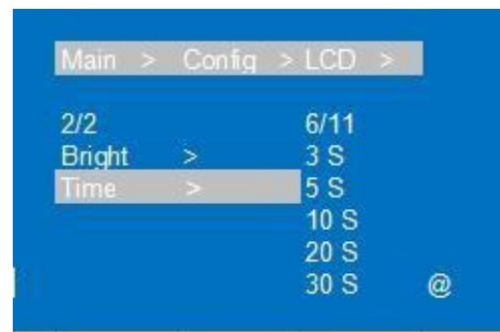
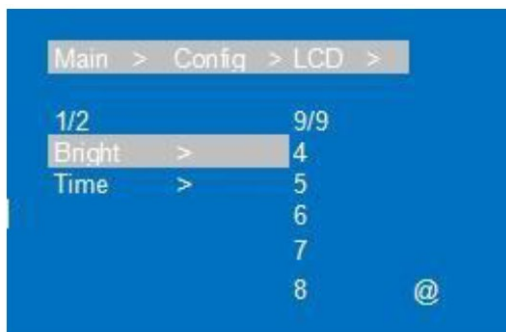


1. Select “Config”, press “ENTER”.
2. Press “UP/▲ or DOWN/▼” button to select “LCD”, press “ENTER”.
3. Press “UP/▲ or DOWN/▼” button to select “Bright” or “Time”. Press “ENTER”.
4. Press “UP/▲ or DOWN/▼” button to adjust the selected item according to your choice.



The higher the brightness level is, then greater the brightness and opposite, the lower level, then smaller brightness.

5. Press “MENU”, to return to the previous menu, and then press “UP/▲ or DOWN/▼” button to select the other item. Press “ENTER”.
6. Press “UP/▲ or DOWN/▼” button to adjust the selected item according to your choice.
7. The @ symbol appears next to the selected value as a confirmation of the selection.



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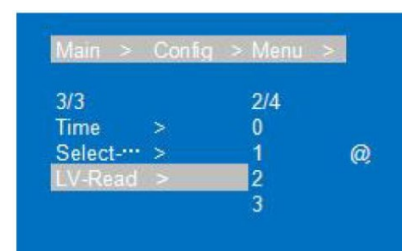
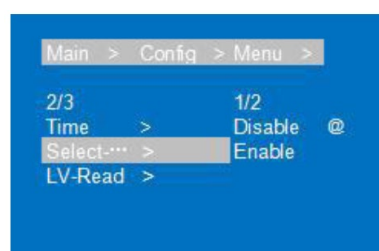
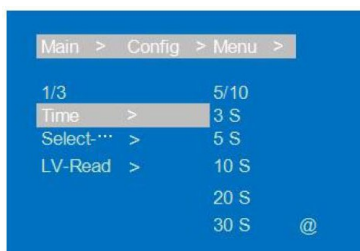
D. Menu

Allows to **set following menu settings**:

- **Time:** No next operation within 30s and return to the channel interface.
- **Select-run:** Disabled by default. If you select this option, it is not necessary to press "ENTER" to confirm the option chosen.
- **LV-Read:** this option is not operative in this device.



1. Select **"Config"**, press **"ENTER"**.
2. Press **"UP/▲ or DOWN/▼"** button to select **"Menu"**, press **"ENTER"**.
3. Press **"UP/▲ or DOWN/▼"** button to **select "Time", "Select-run" or "LV-Read"**. Press **"ENTER"**.
4. Press **"UP/▲ or DOWN/▼"** button to **adjust the selected item** according to your choice.
5. Press **"MENU"**, to **return to the previous menu**, and then press **"UP/▲ or DOWN/▼"** button to **select the other items**. Press **"ENTER"**.
6. Press **"UP/▲ or DOWN/▼"** button to **adjust** the selected item according to your choice.
7. The **@ symbol appears next to the selected value as a confirmation** of the selection.



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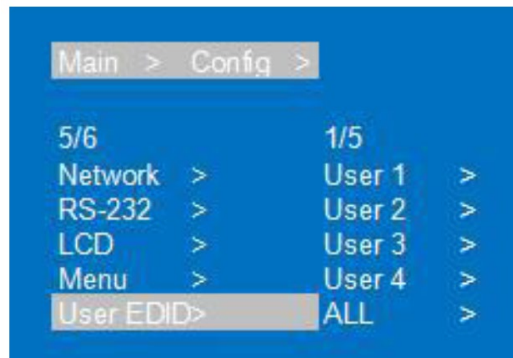
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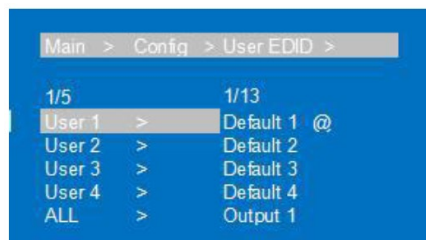
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E. User EDID

Allows to **save default EDID, output EDID and temporary EDID** to the User EDID.

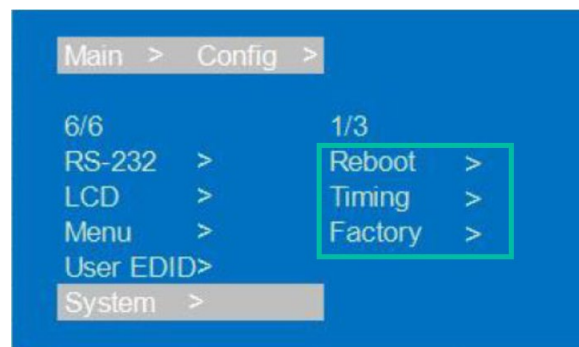


1. Select **“Config”**, press **“ENTER”**.
2. Press **“UP/▲ or DOWN/▼”** button to select **“User EDID”**, press **“ENTER”**.
3. Press **“UP/▲ or DOWN/▼”** button to select **“User1~4”** or **“ALL”**, press **“ENTER”**.
4. Press **“UP/▲ or DOWN/▼”** button to select **default EDID, output EDID or temporary EDID** to save **User EDID**, while you can check EDID information.
5. The **@** symbol appears next to the selected value as a confirmation of the selection.



F. System

Allows to **set device's Reboot, Timing switch and Factory data reset**.

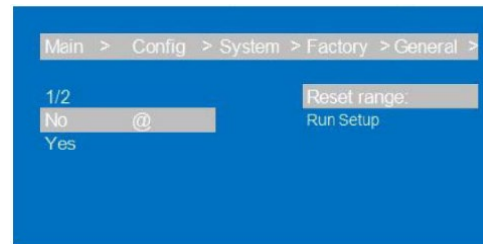
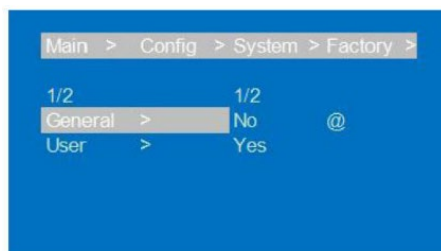
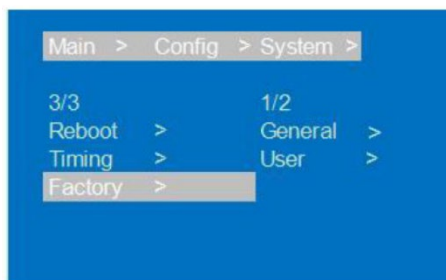


1. Select **“Config”**, press **“ENTER”**.
2. Press **“UP/▲ or DOWN/▼”** button to select **“System”**, press **“ENTER”**.

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3. Press “UP/▲ or DOWN/▼” button to select:

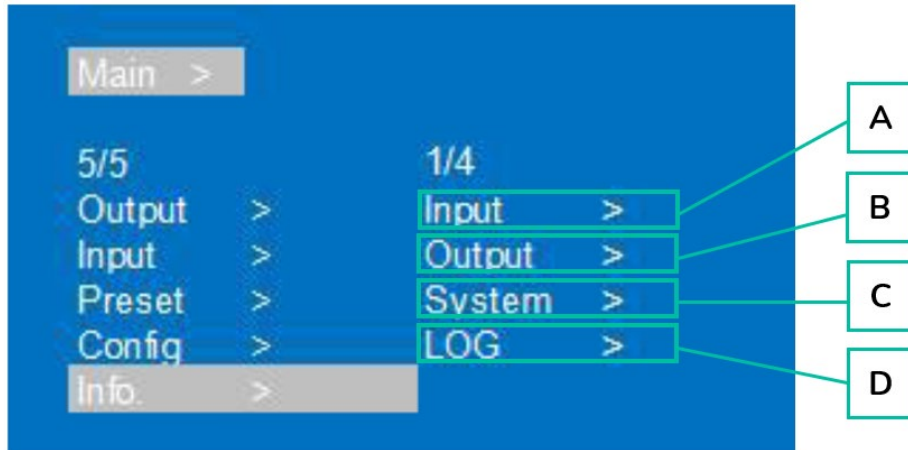
- **Reboot:** select **Yes** or **No**.
- **Timing:** select **Yes** or **No**. If the option **Yes** is selected, timing to switch off the device can be adjusted between **S/M/H/D (Second/Minute/Hour/Day)**. The default is “Endless”, with no timing Settings.
- **Factory:** there are two different options to restore factory defaults:
 - **General:** restore video/audio/EDID/baud to default.
 - **User:** restore all settings to default except account.



4. Press “UP/▲ or DOWN/▼” button to **adjust the selected item** according to your choice.
5. Press “MENU”, to **return to the previous menu**, and then press “UP/▲ or DOWN/▼” button to **select the other items**. Press “ENTER”.
6. Press “UP/▲ or DOWN/▼” button to adjust the selected item according to your choice.
7. The **@ symbol** appears next to the selected value as a **confirmation** of the selection.

5.7 Info

This section allows to check the status of several device settings.



1. Press “UP/▲ or DOWN/▼” button to select “Info”. Press “ENTER”.
2. Press “UP/▲ or DOWN/▼” button to select the item you want to adjust.
 - A. **Input:** input connection status, input resolution, Colour gamut colour depth, audio format and input HDCP version, after selecting the input port.
 - B. **Output:** output connection status, output resolution, Colour gamut colour depth, audio format, after selecting the output port.
 - C. **System:** checking Device system information (Manufacturer/Device ID/device type), Versions (MCU/web page) and Network parameter (IP/GW, Mask).
 - D. **LOG:** checking device information of running time, startup times, operation times, runs errors times.
3. Press “ENTER” and with “UP/▲ or DOWN/▼” select the item you want to check.
4. Press “MENU”, to return to the previous menu, and then press “UP/▲ or DOWN/▼” button to select the other items. Press “ENTER”.
5. Press “UP/▲ or DOWN/▼” button to select item according to your choice.
6. The @ symbol appears next to the selected value as a confirmation of the selection.



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5.8 Remote Controlling


VEO-MXH88D can be remotely controlled over RS-232 or TCP/UDP communications protocol.

- For RS-232 serial communication: enter the selected parameters on [Series Port Setting chapter](#).
- For TCP/UDP communication: enter the current VEO-MXH88D IP address and Port: 5000 for TCP or 5001 for UDP commands.


5.8.1 Series Port Setting

The **serial parameters for a correct transmission** are:

Baud rate 115200 (by Default) | Data bits 8 | Stop bits 1 | Parity None | Flow control None

 For a correct communication, both the host PC and VEO-MXH88D need to have the same baud rate amongst the available options.

5.8.2 Command List

- 
- All commands start with “#”
 - “_” the underline cannot be omitted.
 - Command head, Parameter and target need to add one “SPACE”.

Command Code	Description	Command Return
#video_d out[x] source=[y]	Switches Video Output channel [x] to Input channel [y] PARAMETERS DESCRIPTION <ul style="list-style-type: none"> • [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output • [y]: Input channel number, ranging from 1 to 8 	<Output[x] : Video source> [Data=[y-1] : Input [y]]
#video_d out[x] onoff=[y]	Turns on and off Output channel [x] PARAMETERS DESCRIPTION <ul style="list-style-type: none"> • [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output • [y]: ON = 1 OFF = 0 	<Output[x] : Video OnOff> [Data=[y-1] : Input [y]]
#audio_d out[x] iis=[y]	Enables or disables analogue audio extraction on channel [x] PARAMETERS DESCRIPTION <ul style="list-style-type: none"> • [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output • [y]: enable or disable analogue audio extraction ON = 1 OFF = 0 	<Output[x] : Audio IIS> [Data=[y-1] : Input [y]]



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#audio_d out[x] hdmi=[y]	<p>Enables or disables HDMI audio on channel [x]</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output [y]: enable or disable HDMI audio ON = 1 OFF = 0 	<Output[x] : Audio HDMI> [Data=[y-1] : Input [y]]
#audio_d out[x] arc=[y]	<p>Enables or disables ARC audio on channel [x]</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output [y]: enable or disable ARC audio ON = 1 OFF = 0 	<Output[x] : Audio ARC> [Data=[y-1] : Input [y]]
#audio_d out[x] spdif=[y]	<p>Enables or disables SPDIF audio on channel [x]</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: Output channel number, ranging from 1 to 8. If [x]=255, all output [y]: enable or disable SPDIF audio ON = 1 OFF = 0 	<Output[x] : Audio spdif> [Data=[y-1] : Input [y]]
#preset scene[x] exe=[y]	<p>Saves, calls or clears a preset</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: Preset number, ranging from 1 to 8. [y]: saves, calls or clears Saves = 1 Calls = 0 Clears = 2 	Preset: Preset[x] Save / Calls / Clears
#lcd bl_lv:[x]	<p>Increases or decreases LCD display backlight</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: backlight level, ranging from 0 to 10 	New LCD bl lv: [x]
#lcd contrast:[x]	<p>Increases or decreases LCD display contrast</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: contrast level, ranging from 0 to 255 	New LCD contrast: [x]
#lock onoff=[x]	<p>Lock or unlocks front panel buttons</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: ON = 1 OFF = 0 	front panel Lock: [x]
#factory:[x]	<p>Performs a factory reset</p> <p>PARAMETERS DESCRIPTION</p> <ul style="list-style-type: none"> [x]: Operation data = 0 All settings = 1 	System reboot...


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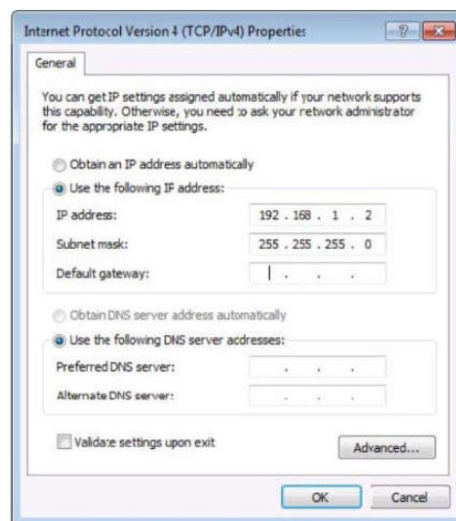
6. WebGUI

The unit can be **controlled and configured by its own built-in web interface** by simply typing the **IP address of the chosen device** into a web browser.

6.1 Change IP address of PC

! Before configuring the device through the website, it is necessary to configure the IP address of your computer to be in the same network segment as the device.

1. Open the Network Control Center on your computer.
2. Find the network connection you are using (Ethernet or Wi-Fi).
3. Right-click on the network connection and select "Properties".
4. Look for "Internet Protocol Version 4 (TCP/IPv4)" or "IPv4" and select it.
5. Choose the option to manually set the IP address.
6. Enter an IP address that is in the same network segment as the device.
7. Set the subnet mask to match the device's network configuration.
8. Leave the default gateway field blank or enter the device's IP address.
9. Save the changes and close the network properties window.



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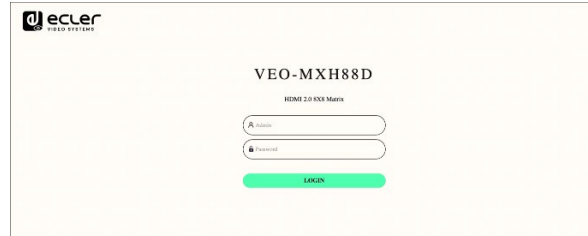
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6.2 Login by Browser


To access VEO-MXH88D WEB settings, it is necessary to enter the base unit IP address in an internet browser.

- **Default IP address:** 192.168.1.168
- **Default username:** admin
- **Default password:** 123456




6.3 EDID Management










The device includes **4 EDID modes**: Default EDID, User EDID, Output EDID, Temp1, control EDID by WEB and RS-232. Factory Default: Default1 4K60 444 2CH.

 **Instructions are as follows:**

Send instruction: #edid_d in%8,d source=%d switch EDID, “in%8,d” parameter need to input 255 or 0~7 (255 means all input), source=%d=0~24(Correspond the table below)

EDID MODE	EDID Index	EDID
Default EDID	0	4096x2160@60-444 HLG 2CH (default)
	1	4096x2160@60-420 HLG 2CH
	2	4096x2160@30-444 HLG 2CH
	3	1920x1080P@120-444 HLG 2CH
User EDID	4-7	User EDID is set by user, with power-off memory function, new EDID will auto-cover old EDID.
Output EDID	8-15	Copy output 1-8 ports' EDID with storage function. without power-off memory
Temp1	24	Temporary EDID

 The above EDID supports **4K Downscaler 1080P**.

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6.4 STATUS Interface

This section allows to **check the status of several device settings**.

- **Input info:** Displays the status and information of the current device input port, Includes the connection status, input resolution, gamut colour depth, HDCP version information and input audio format of each input port.
- **Output EDID info:** Displays the status and information about the output port, Includes the connection status, output resolution and colour gamut, output audio format, EDID manufacturer of each output port.
- **Device info:** Displays the current name of the device, MCU and HTML of version number (Same as on the screen).

<ul style="list-style-type: none"> Status Input Output Matrix Preset System 	Input Info <table border="1"> <thead> <tr> <th></th> <th>Connect</th> <th>Resolution</th> <th>Color</th> <th>Audio</th> <th>HDCP</th> </tr> </thead> <tbody> <tr> <td>In1</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In2</td> <td>√</td> <td>3840x2160P 59.94</td> <td>420 36bit</td> <td>PCM-2 48K 16bit</td> <td>HDCP2.2</td> </tr> <tr> <td>In3</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In4</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In5</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In6</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In7</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>In8</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> </tbody> </table>							Connect	Resolution	Color	Audio	HDCP	In1	x	x	x	x	x	In2	√	3840x2160P 59.94	420 36bit	PCM-2 48K 16bit	HDCP2.2	In3	x	x	x	x	x	In4	x	x	x	x	x	In5	x	x	x	x	x	In6	x	x	x	x	x	In7	x	x	x	x	x	In8	x	x	x	x	x
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Output EDID Info <table border="1"> <thead> <tr> <th></th> <th>Connect</th> <th>Resolution</th> <th>Color</th> <th>Audio</th> <th>MFR</th> </tr> </thead> <tbody> <tr> <td>Out1</td> <td>√</td> <td>4096x2160P 60</td> <td>444 Dolby-Vision</td> <td>MAT-8 48K</td> <td>TSB3700</td> </tr> <tr> <td>Out2</td> <td>√</td> <td>4096x2160P 60</td> <td>444 Dolby-Vision</td> <td>MAT-8 48K</td> <td>TSB3700</td> </tr> <tr> <td>Out3</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Out4</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Out5</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Out6</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Out7</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Out8</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> <td>x</td> </tr> </tbody> </table>							Connect	Resolution	Color	Audio	MFR	Out1	√	4096x2160P 60	444 Dolby-Vision	MAT-8 48K	TSB3700	Out2	√	4096x2160P 60	444 Dolby-Vision	MAT-8 48K	TSB3700	Out3	x	x	x	x	x	Out4	x	x	x	x	x	Out5	x	x	x	x	x	Out6	x	x	x	x	x	Out7	x	x	x	x	x	Out8	x	x	x	x	x	
	Connect	Resolution	Color	Audio	MFR																																																							
Out1	√	4096x2160P 60	444 Dolby-Vision	MAT-8 48K	TSB3700																																																							
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Out3	x	x	x	x	x																																																							
Out4	x	x	x	x	x																																																							
Out5	x	x	x	x	x																																																							
Out6	x	x	x	x	x																																																							
Out7	x	x	x	x	x																																																							
Out8	x	x	x	x	x																																																							
Device Info <p>MCU Version: <input type="text" value="V0.0.19"/></p>																																																												



“√” means open or normally connected, “x” means that it is closed or not connected.



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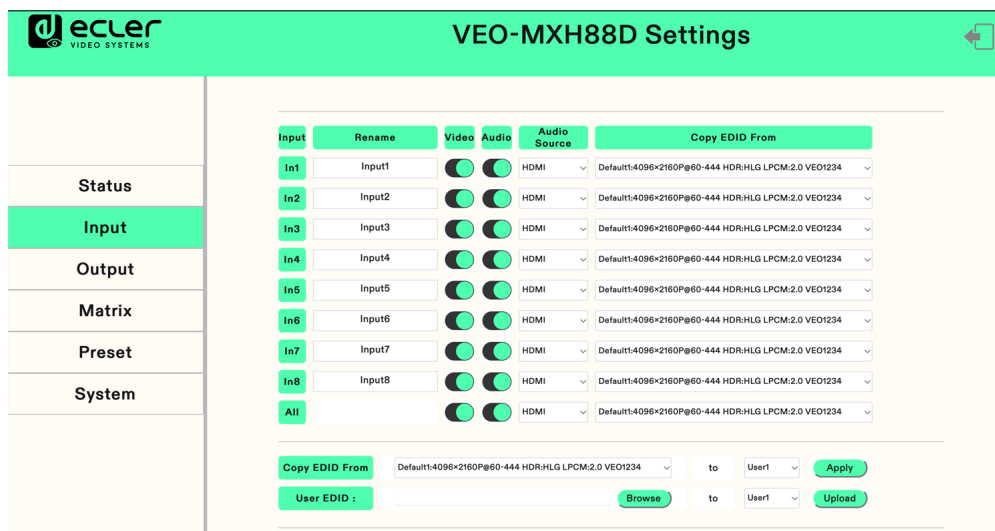
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6.5 Input interface

This section allows to **rename input ports**, **switching video signals** (opened by default), **switching audio input**, **selecting EDID**, and **switching audio source signals**.

- **Rename:** Modify the current name of input port, support 1~15 characters (numbers, letters and underscores) which is synchronized with the screen.
- **Video:** Switch input video, Once the input video is off, the audio extraction output is muted.
- **Audio:** Switch audio of audio source (include HDMI and embedded audio), The default is on.
- **Audio Source:** Switch audio source, HDMI: select input source audio, ENC: select embedded audio input.
- **Switch EDID:** Set default, copy, user EDID, and show EDID information (HDR, audio channel, resolution, colour gamut).
- **User EDID:** Save default/copy EDID to User EDID and upgrade the BIN file to the User EDID.
- **All:** select all input ports to realize fast switch.



To operate each item:

1. **Rename:** Double click the left mouse button to enter the name editing to customize the name.
2. **Video/Audio:** Click the two-way button to complete the switch setting of input video and audio (in green means on and in grey means off).



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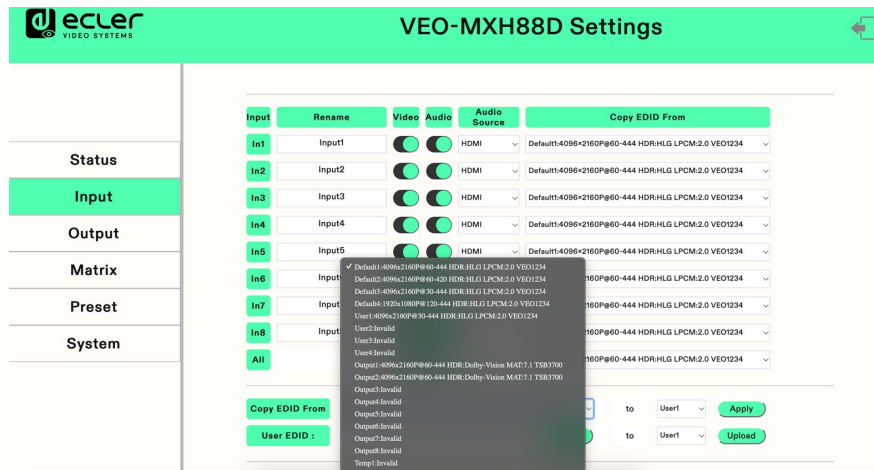
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3. **Audio source:** Use the mouse to click the white dropdown to switch the corresponding input audio source.
4. **Copy EDID from:** Use the mouse to click the white dropdown to complete the corresponding EDID switch. The dropdown will show the current EDID information.



5. User EDID selection:

- Click the whitebox, select EDID, then select user1 ~ 4 in the box, and finally click apply.
- Click browse and select the path where the bin file is located, then select user1 ~ 4 in the box and finally click Upload. The EDID can be imported into user EDID.



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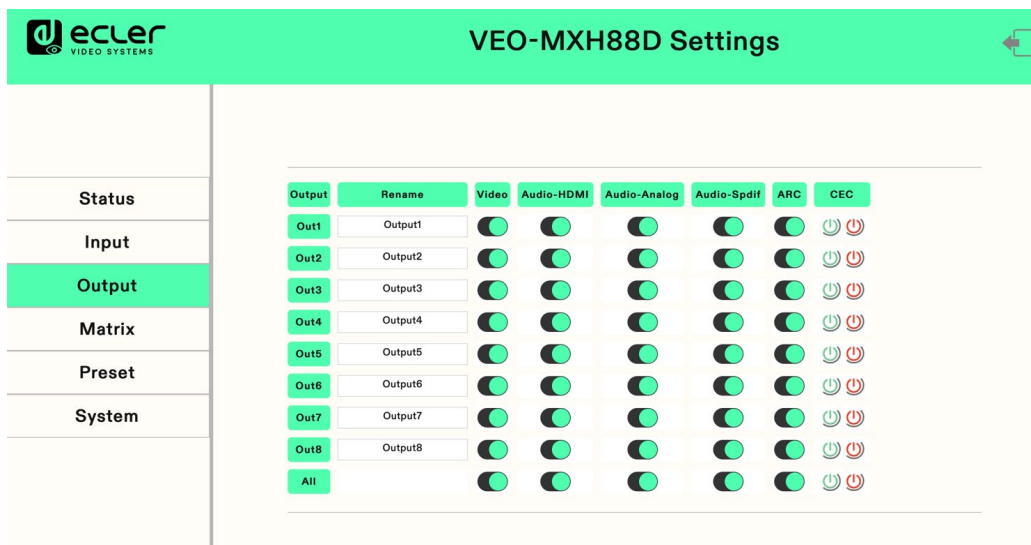
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6.6 Output interface


This section allows to **port renaming**, **switching output video** (on by default), **switching audio output** (HDMI/Analog/SPDIF), **ARC function** (off by default).

- **Rename:** Modify the current name of output port, support 1~15 characters (numbers, letters and underscores) which is synchronized with the screen.
- **Video:** Switch output video, close the output port video does not affect the audio extraction function, the 5V output needs to be turned off at the same time.
- **Audio-HDMI:** Switch HDMI output audio (on by default).
- **Audio-Analog:** Switch Analog audio extraction output (on by default).
- **Audio-SPDIF:** Switch SPDIF audio extraction output (on by default).
- **ARC:** Switch ARC audio return output (off by default).
- **CEC:** TV with CEC function, support start up; shutdown cannot be supported.




To operate each item:

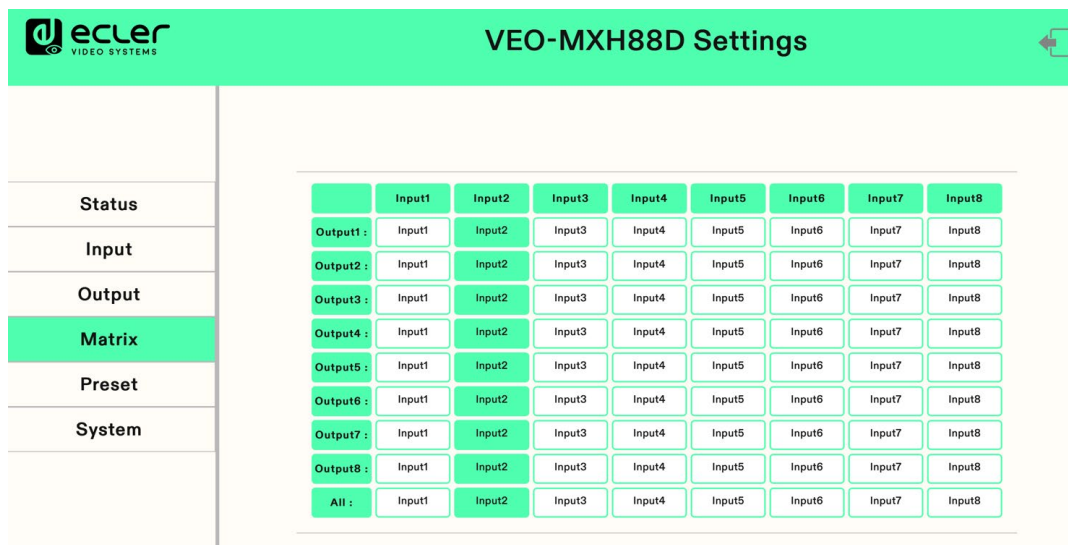
1. Double click the left mouse button to enter the name editing to customize the name.
2. Click the two-way button to complete the switch setting of output video, audio and ARC function.

 In green means on and in grey means off.

6.7 Matrix interface

This section allows to **display the input source** corresponding to the current output port, **Switching the input to an output port and output the image.**

 **Vertical axis means output port selection, abscissa axis means input port selection and All means select all output.**



Click the input box to switch the corresponding output port. The above picture shows the PIP one to one output.



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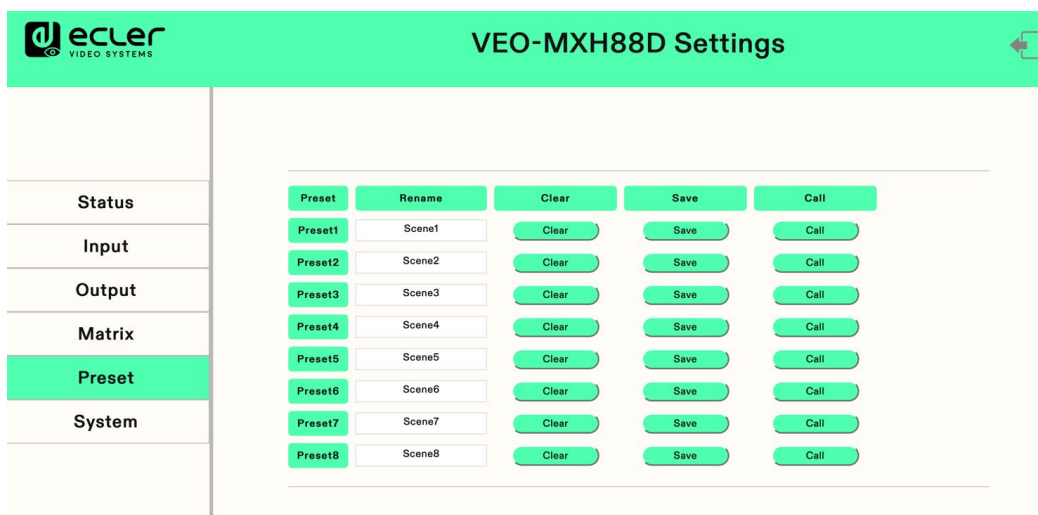
6.8 Preset Interface

Use this option to **rename, saving, calling, and clearing** of preset scene.



The device can preset 8 scenes and support scene renaming.

- **Clear** means clears the current saved scene.
- **Save** means save the current changed scene, the video, audio and system settings can be saved, but network parameter cannot be saved.
- **Call** means call the changed scene.



1. Double click the left mouse button “**Preset1**”, Click “enter” to the name edit box.
2. Click **Clear**, to clear the scene.
3. Click **Save**, to save the current scene.
4. Click **Call**, to call the saved scene.



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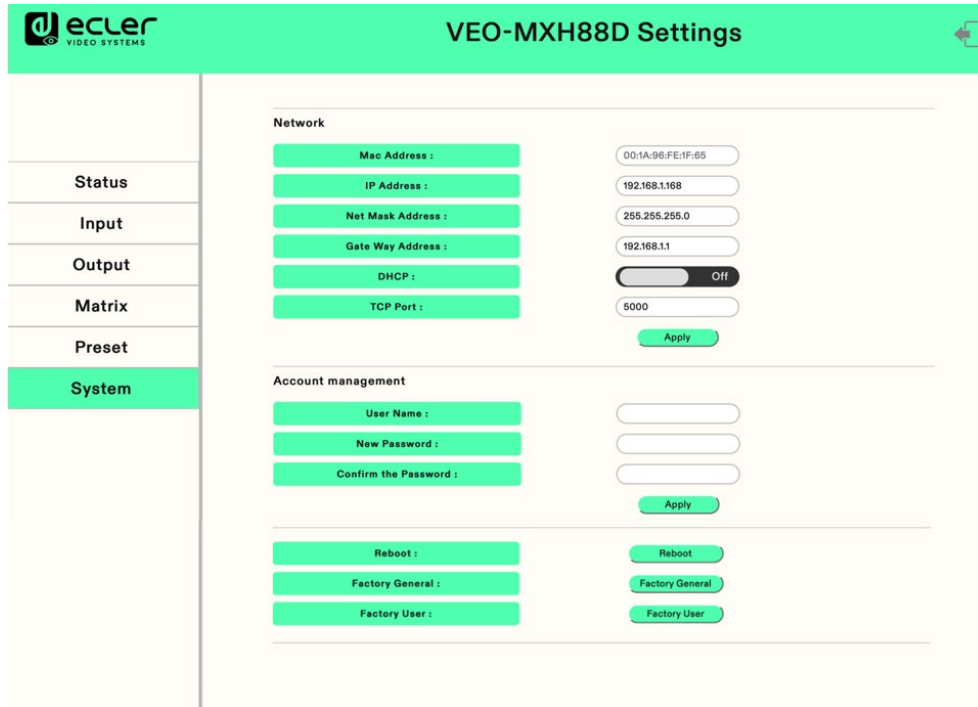
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6.9 System interface

This section allows to **modify and show network parameters and control protocol parameters**, modify **web login account and password**, **reboot device**, general restore factory, user restore factory.



- **Mac address** can only be displayed. It cannot be modified.
- **IP address** is 192.168.1.168 by default. It can be modified.
 - After DHCP is opened, dynamic IP is used. In this case, the IP address cannot be modified and can assign by router.
 - After DHCP is off, static IP is used. In this case, the IP address can be modified. After the modification, click Apply.
- **Net MASK and Gate Way address** can be modified, but the prerequisites are same as the IP address.
- **DHCP** use two-way button as switch, click directly to open DHCP (Green button means open DHCP and Gray means close DHCP).
- **TCP port:** Configure port to access VEO-MXH88D.
- **Account management:** enter your account and password in the white box, Click Apply. It takes effect on next login, support 1~15 characters (numbers, letters, and underscores).
- **Click Reboot / Factory General / Factory User**, click enter according to your desired option.



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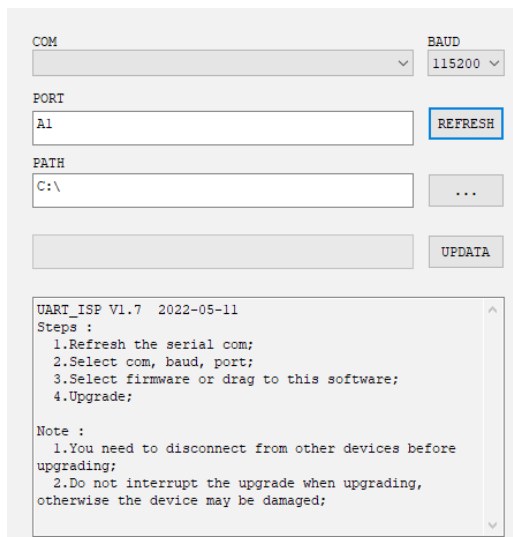
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7. FIRMWARE UPGRADE

To update the MCU and web page using the updating software, follow these steps:

1. Connect your PC and the device using the RS-232 cable.
2. Open the updating software on your PC.
3. Click on the "Refresh" button to refresh the serial port list and select the correct serial port number for the device.
4. The default baud rate is 115200. Make sure the baud rate setting matches the device.
5. On the software, input "A1" in the port input field to initiate the MCU upgrade process.
6. Select the path where the MCU upgrade program resides and follow the on-screen instructions to proceed with the upgrade.
7. After the MCU upgrade is completed, input "F0" in the port input field to initiate the web page upgrade process.
8. Select the path where the web page upgrade program resides and follow the on-screen instructions to proceed with the upgrade.
9. Click on the "Update" button to start the update process.
10. Wait for the update process to complete. The information bar will display "Success" once the update is successful.



COM: [Dropdown] BAUD: 115200 [Dropdown]

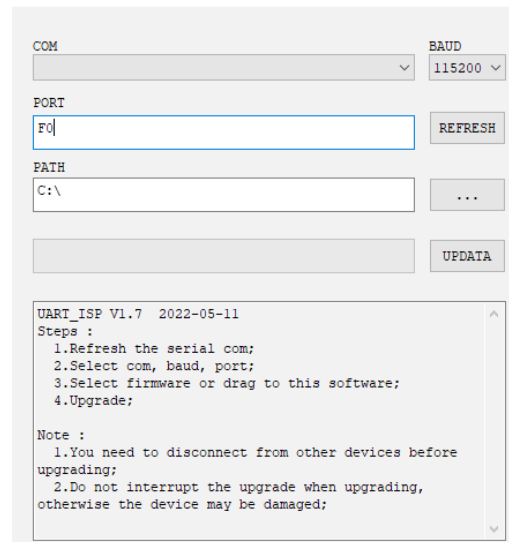
PORT: A1 [Text] [REFRESH]

PATH: C:\ [Text] [...]

[Text] [UPDATE]

UART_ISP V1.7 2022-05-11
 Steps :
 1.Refresh the serial com;
 2.Select com, baud, port;
 3.Select firmware or drag to this software;
 4.Upgrade;

Note :
 1.You need to disconnect from other devices before upgrading;
 2.Do not interrupt the upgrade when upgrading, otherwise the device may be damaged;



COM: [Dropdown] BAUD: 115200 [Dropdown]

PORT: F0 [Text] [REFRESH]

PATH: C:\ [Text] [...]

[Text] [UPDATE]

UART_ISP V1.7 2022-05-11
 Steps :
 1.Refresh the serial com;
 2.Select com, baud, port;
 3.Select firmware or drag to this software;
 4.Upgrade;

Note :
 1.You need to disconnect from other devices before upgrading;
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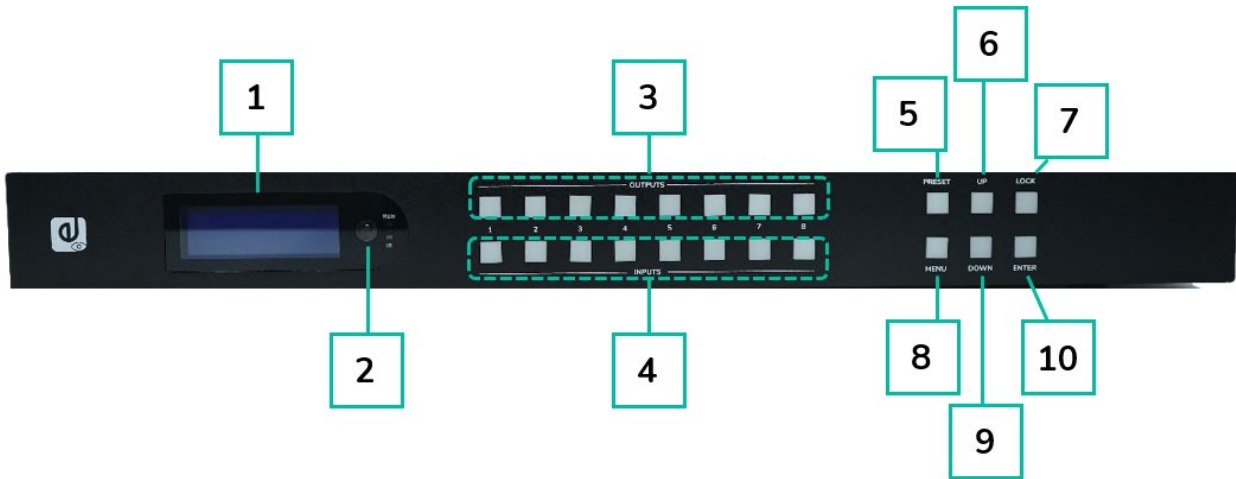
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8. PANELS & REMOTE FUNCTIONS

8.1 Front Panel



1. **LCD screen**
2. **IR receiver window**
3. **Output buttons from 1 to 8:**
 - short press to choose one output, press again to cancel.
 - long press to choose all output, long press again to cancel.
4. **Input buttons from 1 to 8:**
 - short press to choose one input (workable only if choose the output already).
 - long press to choose one input for all output.
5. **PRESET:** short press to preset.
6. **UP:** short press to up.
7. **LOCK:** long press to lock, long press again to unlock ; when lock, all button is unworkable except for lock button.
8. **MENU:** press to main menu interface or return to the previous menu interface.
9. **DOWN:** short press to down.
10. **ENTER:** short press to confirm.



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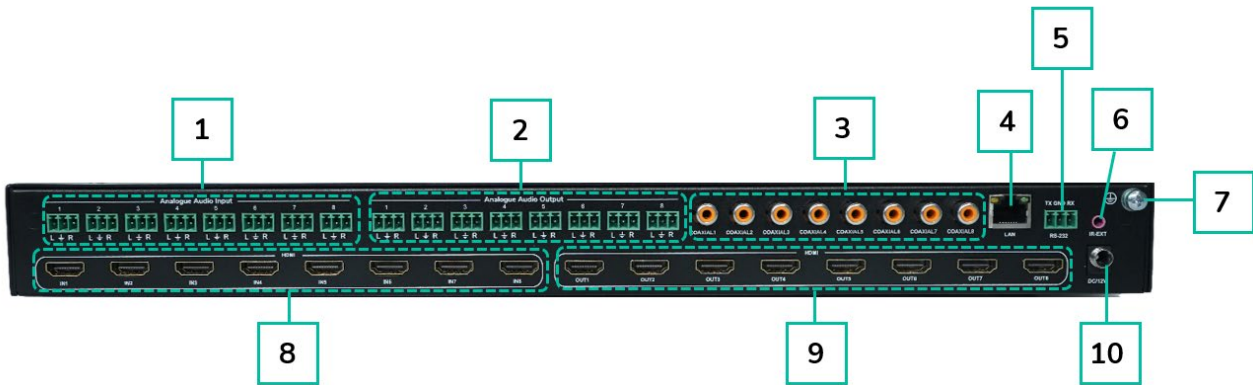
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8.2 Rear Panel



- | | |
|-----------------------------------|----------------------------|
| 1. AUDIO IN (Analogue x8) | 6. IR port |
| 2. AUDIO OUT (Analogue x8) | 7. Grounding |
| 3. AUDIO OUT (SPDIF x8) | 8. HDMI Input x8 |
| 4. Ethernet port | 9. HDMI Output x8 |
| 5. RS-232 | 10. DC12V/3A input. |



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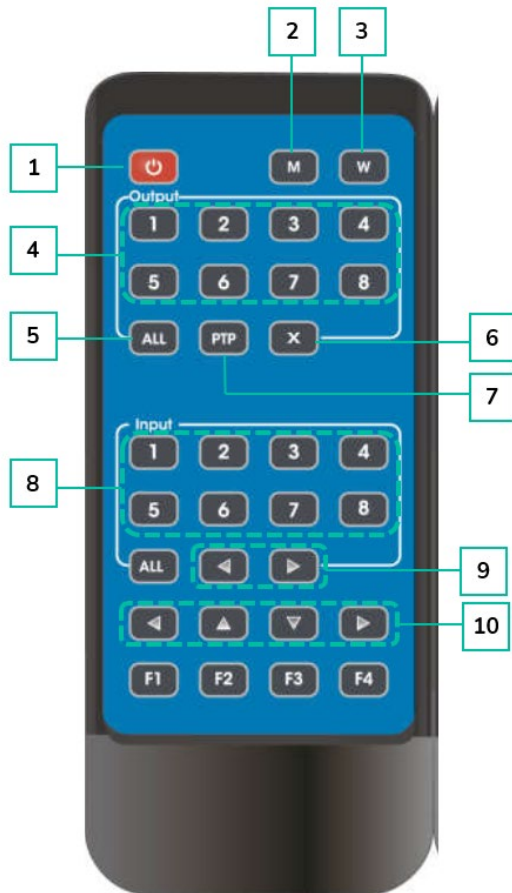
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8.3 Remote Control



1. **Power on / Standby**
2. **M:** Turn off the HDMI output audio
3. **W:** Lock or Unlock panel buttons.
4. **Output 1-8**
5. All **outputs** select INPUT-Y:
 - Press ALL button
 - Press INPUT-Y button (Y means 1 to 4 of the inputs).
6. **X:** Turn off output channel.
7. **PTP:** Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc)
8. **Input 1-8**
9. **Switching input left and right**
10. **Up and down, left, and right.**

- **Power on/standby:**

- Short press the power button to enter standby mode. The LCD screen will display "System Shutdown", and the HDMI output will be disconnected, resulting in no image on the TV.
- Short press the power button again to wake up the device. The HDMI output will be restored to normal.

- **Video switch:**

- To switch the video signal from one input to a specific output, press the corresponding output button followed by the input button.
- For example, to switch the signal from input 2 to output 1, press output 1 button followed by input 2 button.



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- **Turn off HDMI output audio:**
 - To mute the audio for a specific output, press the corresponding output button followed by the "M" button.
 - For example, to turn off the audio for output 1, press output 1 button followed by the "M" button.
- **Lock remote control:**
 - To lock the remote control, press the "W" button. This will prevent any further input from the remote control.
 - To unlock the remote control, short press the "W" button again.
- **Turn off output channel:**
 - To turn off a specific output channel, press the corresponding output button followed by the "X" button.
 - For example, to turn off output 1, press output 1 button followed by the "X" button. This will result in a black screen for output 1.
 - To return the output channel to normal, press the corresponding output button followed by the "X" button again.
- **Switching input left and right:**
 - To switch between inputs in a left or right direction, press the "All" button followed by the ◀ or ▶ button.
 - This will change the TV image according to the switching input. If there is no input signal, it will automatically skip to the next available input



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9.1 Technical Specifications

VEO-MXH88D

Video Performances	
Video Input Connectors	8 x HDMI Type A Female, 2.0, 18 Gbps
Video Output connectors	8 x HDMI Type A Female, 2.0, 18 Gbps
Video Input Resolution	480p@60hz, 576p@50hz, 720p@60hz, 1080p@24hz, 1080p@50hz, 1080p@60hz, 4K@24hz, 4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4
Video Output Resolution	480p@60hz, 576p@50hz, 720p@60hz, 1080p@24hz, 1080p@50hz, 1080p@60hz, 4K@24hz, 4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4
Chroma Subsampling	YUV 4:4:4, YUV 4:2:0 (4K @ 60Hz)
Colour Depth	8-bit, 10-bit, 12-bit
Colour Space	RGB, YUV
HDCP	2.2
HDR	HDR10, Dolby Vision, HLG
HDMI Distance	10m with Ecler VEO Cables (up to 1080p) 5m with Ecler VEO Cables (up to 4K)
Audio Performances	
Audio Input Connectors	8 x 3 pin Euroblock connector
Audio Output Connectors	8 x 3 pin Euroblock connector, 8 x Coaxial Digital Out connector
Audio Formats	PCM2.0, PCM5.1, PCM7.1, Dolby Digital, DTS 5.1, Dolby Digital+ Dolby True HD, DTS-HD master audio, Dolby Atmos, DTS-X
Sample Rate	Up to 192KHz
ARC/eARC	ARC
Audio De-Embedding	Yes
Audio Embedding	Yes
Device Control	
Control Connectors	Euroblock, RJ-45, IR 3,5mm stereo jack
Control Protocols	Web, Telnet, RS-232, IR, Front panel Buttons and LCD Display
Control Buttons	1 x Enter, 1 x Lock, 1 x Up, 1 x Down, 1 x Preset Selection, 1 x Menu, 8 x Input Selection, 8 x Output Selection, Remote control
EDID Management	Software, Front Panel Buttons
Status Indicators	Input LED, LCD Display
Network	
Network Connectors	1 x RJ-45
Electrical	
Power Supply	External Power supply
AC Mains Connector	100-240VAC 50-60Hz with EU, UK, US, AU blades
DC Mains Connector	12VDC-3A with coaxial DC connector
Power Consumption	28W



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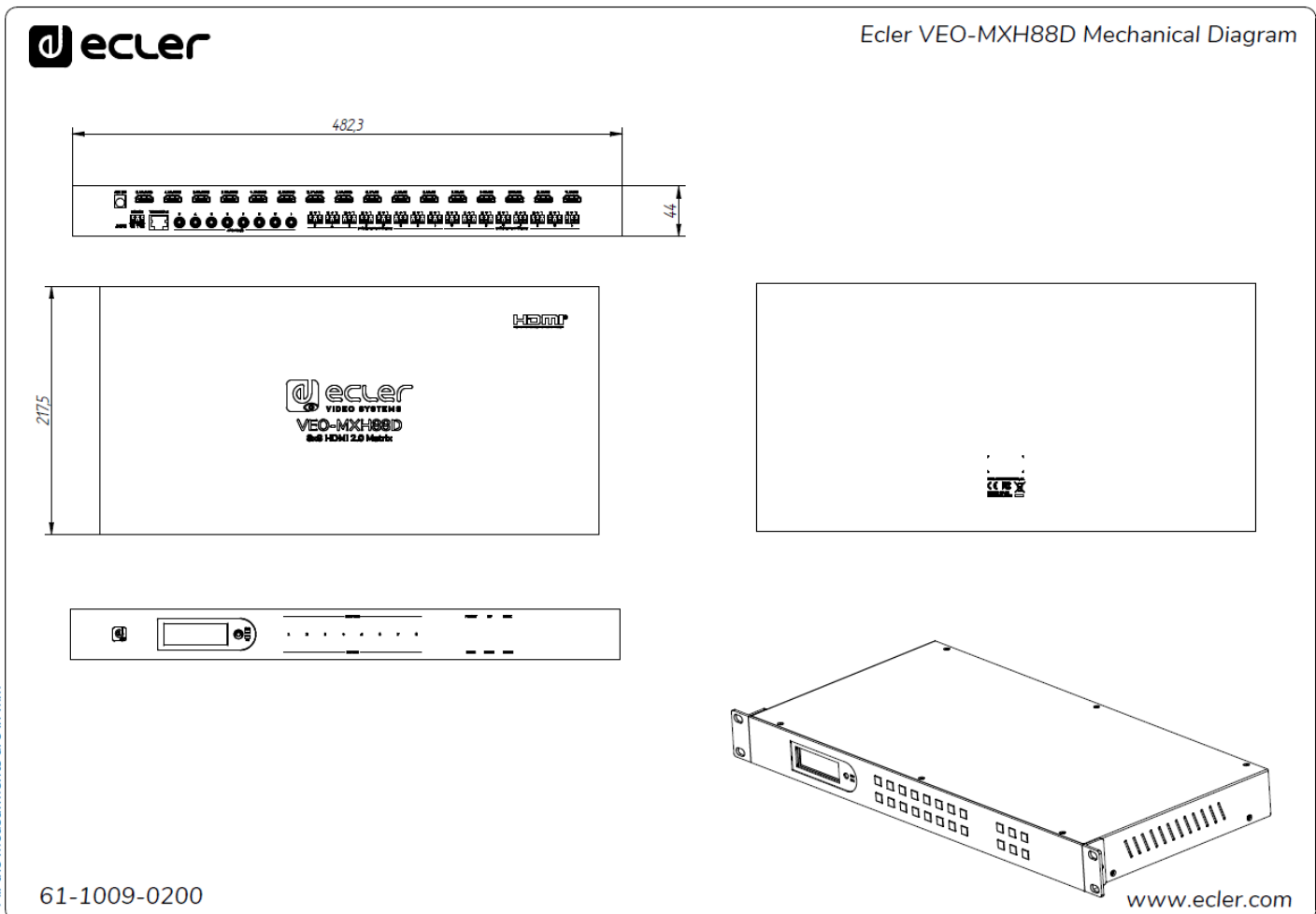
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Physical

Operating Temperature	Min: 0°C; 32°F Max: 40°C; 104°F
Operating Humidity	<90% HR
Installation Options	Desktop
Included Accessories	17 x 3 pin Euroblock connector, 1 x Remote Control, 1 x IR receiver, 1x 12V PSU
Dimensions (WxHxD)	482.4 x 44 x 220 mm. / 18.99 x 1.73 x 8.66 in.
Shipping Dimensions (WxHxD)	500 x 85 x 264 mm. / 19.69 x 3.35 x 10.39 in.
Weight	2.8 Kg / 6.17 lb
Shipping Weight	3.7 Kg / 8.16 lb
Chassis Material	Metal
Finished Colour	Black

9.2 Mechanical Diagram



All the measurements are in mm

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All product characteristics are subject to variation due to production tolerances. **NEEC AUDIO BARCELONA S.L.** reserves the right to make changes or improvements in the design or manufacturing that may affect these product specifications.

For technical queries contact your supplier, distributor or complete the contact form on our website, in [Support / Technical requests](#).

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