

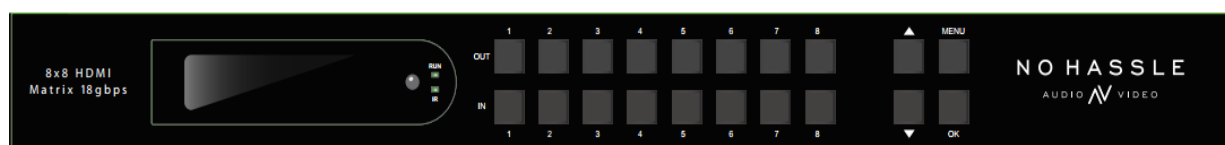
8x8 HDMI Matrix 18Gbps

Support 4K@60hz YUV4:4:4, HDR with 8 loop out

OPERATION MANUAL

4K2K

HDCP2.2



Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

CONTENTS

1. INTRODUCTION	4
2. APPLICATIONS	4
3. PACKAGE CONTENTS	4
4. SYSTEM REQUIREMENTS	4
5. FEATURES	5
6. SPECIFICATIONS	5
7. OPERATION CONTROLS AND FUNCTIONS	6
7.1 Front Panel	6
7.2 Rear Panel	7
7.3 Remote Control	8
7.4 RS-232 Control	15
7.5 Web Control	17
7.6 Micro USB to update firmware.....	18

8. CONNECTION DIAGRAM	19
9. MAINTENANCE	20
10. PRODUCT SERVICE	20
11. WARRANTY	21

1. INTRODUCTION

A matrix switcher for audio and video, fast switching technology. Support 8-way HDMI input signal, with 8 HDMI signals loop out, 8-way HDMI output signal, each HDMI output with 1 analog audio output and 1 digital audio output. Highest resolution support HDMI2.0, 4K@60hz YUV4:4:4, product control is flexible and varied: Panel button control; RS232 serial port control; Infrared remote control, Web GUI control.

2. APPLICATIONS

- Video/TV wall display and control
- Security surveillance and control
- Commercial advertising, display and control
- University lecture hall, display and control
- Retail sales and demonstration

3. PACKAGE CONTENTS

- 1x HDMI Matrix 8X8
- 1x 24V DC power supply with 4 country power plug
- 1x Remote control
- 1x IR Ext RX Cable
- 1x USB AM TO Micro 5P cable
- 1x CD for control software & user manual

4. SYSTEM REQUIREMENTS

- HDMI source equipment such as media players, video game consoles or set-top boxes.
- HDMI receiving equipment such as HDTVs, monitors or audio amplifiers.
- The use of “Premium High Speed HDMI” cables is highly recommended

5. FEATURES

- HDMI 2.0 version (Support 4K@60Hz YUV4:4:4)
- Bandwidth upto 18Gbps
- HDCP2.2 input ,HDCP2.2 output
- HDCP1.4 input, HDCP1.4 output
- Support HDR10 and Dolby Vision
- 8xHDMI Input with 8 loop out, 8xHDMI output
- Any one of the 8 Ultra HD sources to any one of the 8 Ultra HD displays

- Support Dolby True HD and DTS-HD master audio
- The output port supports separate digital 5.1 audio and a single analog audio
- Micro USB interface for user to upgrade firmware
- Controllable via front-panel buttons, IR remote, RS232, IP , Web GUI Control
- 1U rack design, easy installment
- Unit size: L440XW220XH44.5mm

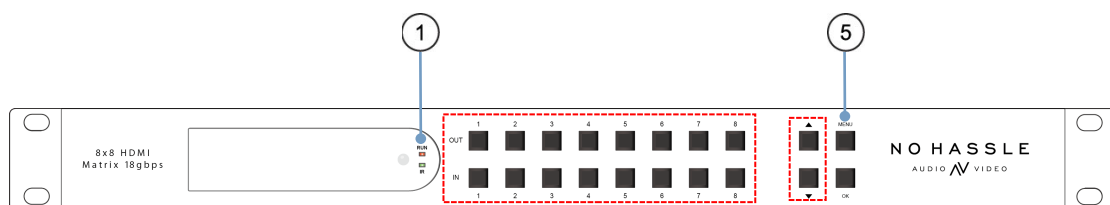
6. SPECIFACATIONS

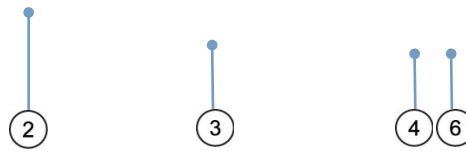
Bandwidth	18 Gbps
Resolution	480p@60hz,576P@50hz,720P@60hz, 1080P@24hz,1080P@50hz,1080P@60hz,4K@24hz,4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4
Video Input Connectors	8xHDMI Type A, 19-pin, female with 8 loop out
Video Output Connectors	8xHDMI Type A, 19-pin, female
RS-232 serial port	DB9, female
Ethernet port (IP control)	RJ45, female
IR Ext port	1x3.5mm stereo jack
Audio	Analog and SPDIF
Firmware upgrade port	Micro type B USB
Rack-Mountable	Rack ears included
Dimensions(WxHxD)	L440XW220XH44.5mm
Net Weight	2.8kg
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Power consumption	43W(Max)

Operating Instruction

7. OPERATION CONTROLS AND FUNCTIONS

7.1 Front Panel

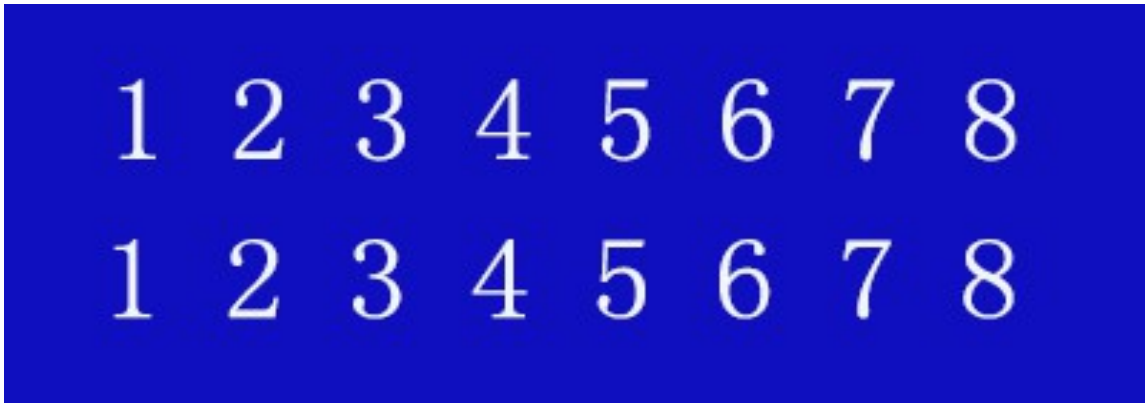




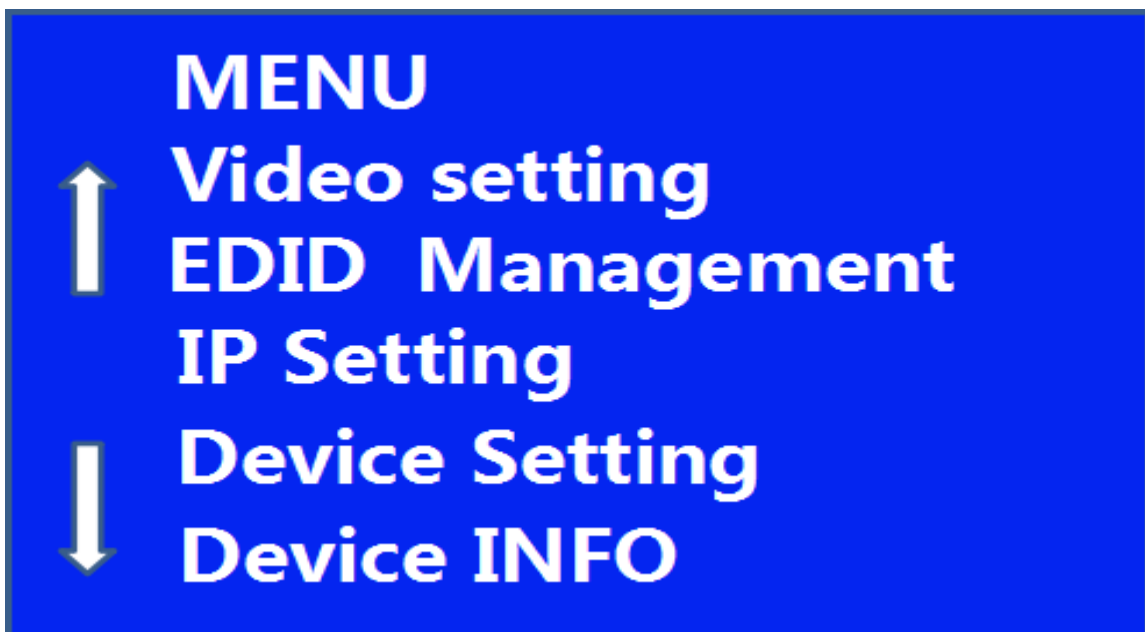
- ① **LCD**: Blue LCD screen, display video switch, Settings and other information
- ② **IR WINDOW**: Accepts IR signals from the included IR remote for control of this unit only. The green indicator light flashes when receiving the infrared remote control information
- ③ **OUTPUT 1~8 & INPUT 1~8**: Press output keys (1~8) to select output source; then press input buttons to select input source (1~8).
HDMI loop out only follows the same port input (switching input is not affected)
- ④ **UP and Down**: Navigation button, scroll up and down in the menu to select the function.
- ⑤ **Menu**: Enter the menu page. Menu items are selected by pressing up and down buttons, and then press OK to enter the sub items. Main contents of the menu, sorted in order
- ⑥ **OK button**: Verify current options



Login interface on the device



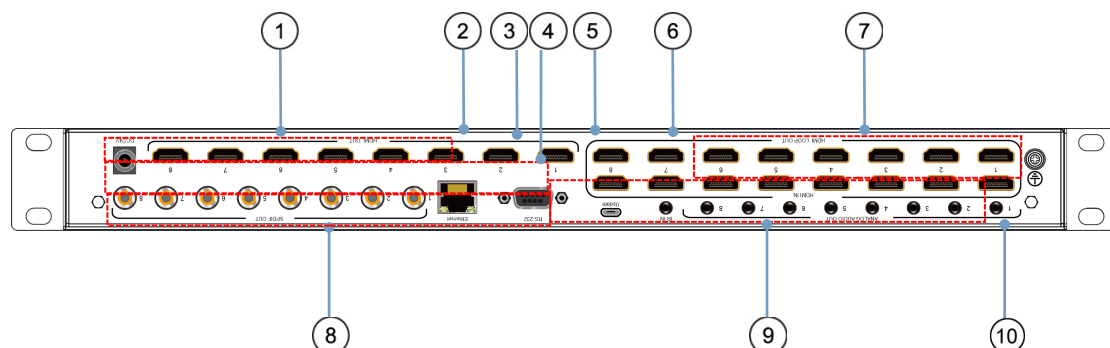
TOP: Input; Bottom: Output



MENU page

NOTED: Under the Menu page, you can use the UP and DOWN button to choose the settings. Every step of operation shall be completed by pressing the confirmation button. No operation shall be returned to the main interface after stopping for 30 seconds or so, and no operation shall be returned to the main interface after 30 seconds or so. The LCD screen is in black screen mode

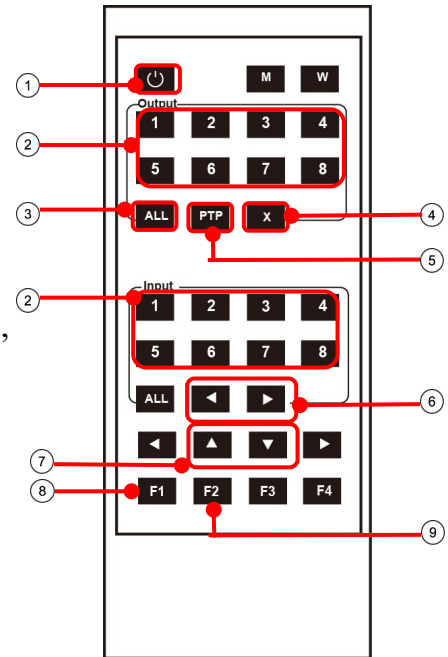
7.2 Rear Panel



- ① **Analog Audio output:** Support PCM2.0 Audio output. Corresponding HDMI output interface audio separation, output sound and HDMI output audio synchronization.
- ② **IR IN:** Connect to the provided IR Extender to extend the IR control range of the unit. Ensure that the remote being used is within direct line-of-sight of the IR Extender.
- ③ **MICRO USB:** This slot is reserved for firmware update use only
- ④ **INPUT 1~8:** Connect to HDMI source equipment such as media players, game consoles or set-top boxes. DVI sources are supported with the use of an HDMI to DVI adapter.
- ⑤ **RS232:** Connect directly to a PC, laptop or other serial control device to send RS-232 commands to control the unit
- ⑥ **Ethernet:** Connect directly, or through a network switch, to your PC or laptop to control the unit via telnet/Web GUI.
- ⑦ **SPDIF output:** Support Dolby Digital, DTS 5.1 Audio output, Corresponding HDMI output interface audio separation, output sound and HDMI output audio synchronization.
- ⑧ **HDMI LOOP OUT:** Each HDMI Input signal come with 1 HDMI Loop out
- ⑨ **OUTPUT 1~8:** Connect to HDMI TVs, monitors or amplifiers for digital video and audio output.
- ⑩ **DC POWER:** Plug the 24V DC power adapter into the unit and connect it to an AC wall outlet for power.

7.3 Remote Control Description

- 1 Standby Mode.
- 2 OUTPUT-X select INPUT-Y:
Press OUTPUT-X (X means 1 to 8 of outputs)
Press INPUT-Y (Y means 1 to 8 of inputs)
- 3 All outputs select INPUT-Y:
Press ALL button in zone OUTPUT
Press INPUT-Y button (Y means 1 to 8 of inputs),
then INPUT-Y switched to ALL OUTPUTS.
- 4 Cancel Button: Cancel the switching operation
- 5 PTP button: Mirror all inputs and outputs
(Ex. Input 1 to output 1, input 2 to output 2, etc):
Press PTP button in Zone OUTPUT.
- 6 Loop switch button for output
- 7 Guide Button: up and down
- 8 F1 = Menu Button
- 9 F2 = OK Button



RS232 Pin Assignment

Matrix			Remote Control Console	
PIN	Assignment		PIN	Assignment
1	NC		1	NC
2	Rx		2	Tx
3	Tx		3	Rx
4	NC		4	NC
5	GND		5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

7.4. RS232 Control

Software control

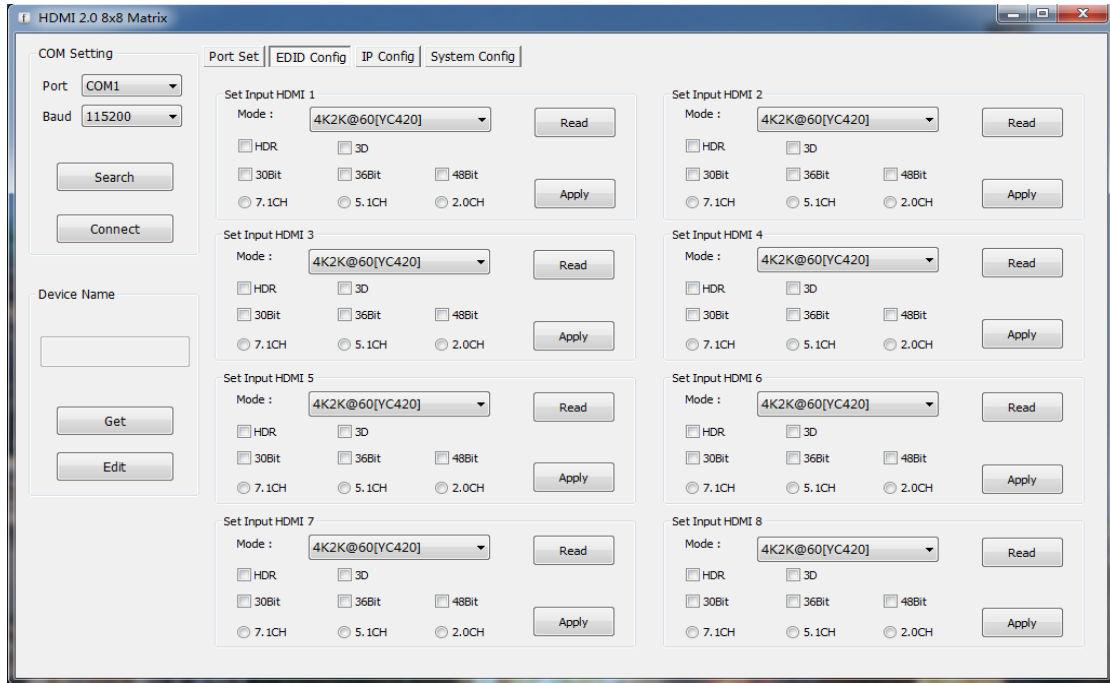
- ◆ Connect the 8x8 Matrix to PC with a RS232 cable, open the software on your PC. On the COM Setting session, select the COM port according to your PC and click “Connect” to get connected.
- ◆ On this COM setting session, you can also change the Device name, Device name support up to 16 characters. Save or edit your status by clicking the Edit button.
- ◆ Come to Port Set session to select or switch your input sources for each output, We can read the current status by clicking the “Status” button, or Clear our historical operating record by clicking “Clear” button. The right down blank shows the operating history.



Picture 1

NOTED: Video switch: 8 sets of Output controls, click the button 1-8 to switch the corresponding Input to Output;
 Selecting ALL, click the button in the Output All, the right square display box will display the current Input status in real time

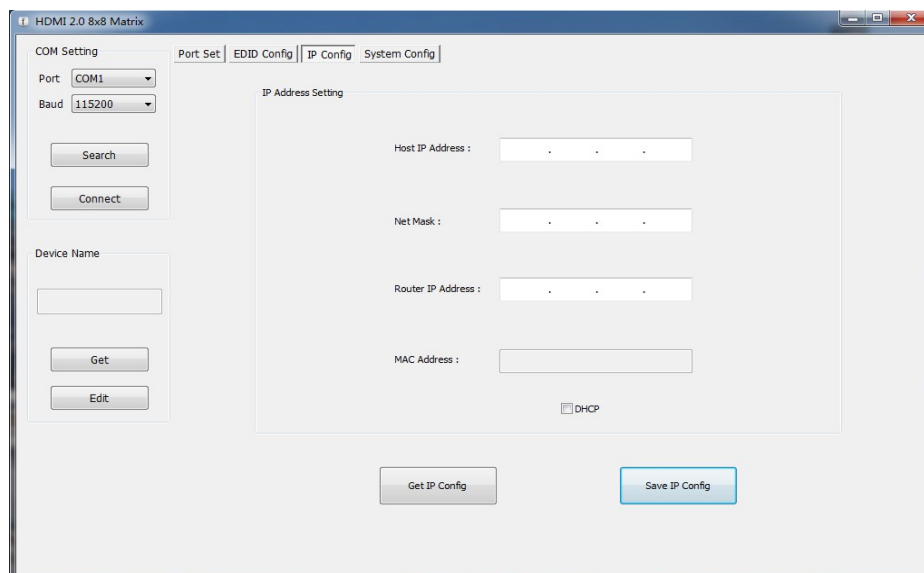
- ◆ The EDID session helps us to Read and Configure EDID for each input, such as HDR, 3D, Data rates and Audio channel.



Picture 2

1. Click any Read button, the current page state can be forcibly obtained and displayed on the control in real time. If the data cannot be obtained successfully for 2 seconds, it will be prompted to fail to obtain the data forcibly and stop the current forced acquisition.
2. Click the Apply button, the current switch or setting is valid, and only applies to the current Set Input HDMI group.
3. Specific steps:
 - (1) select the Mode in the Mode drop-down box
 - (2) Select the required check box and radio (Skip if no option)
 - (3) Click Apply.
 Complete the current EDID setting.

- ◆ The IP configure session helps to read and configure the IP address and MAC of the Matrix. Check DHCP if you want the router to assign an IP for the Matrix automatically .



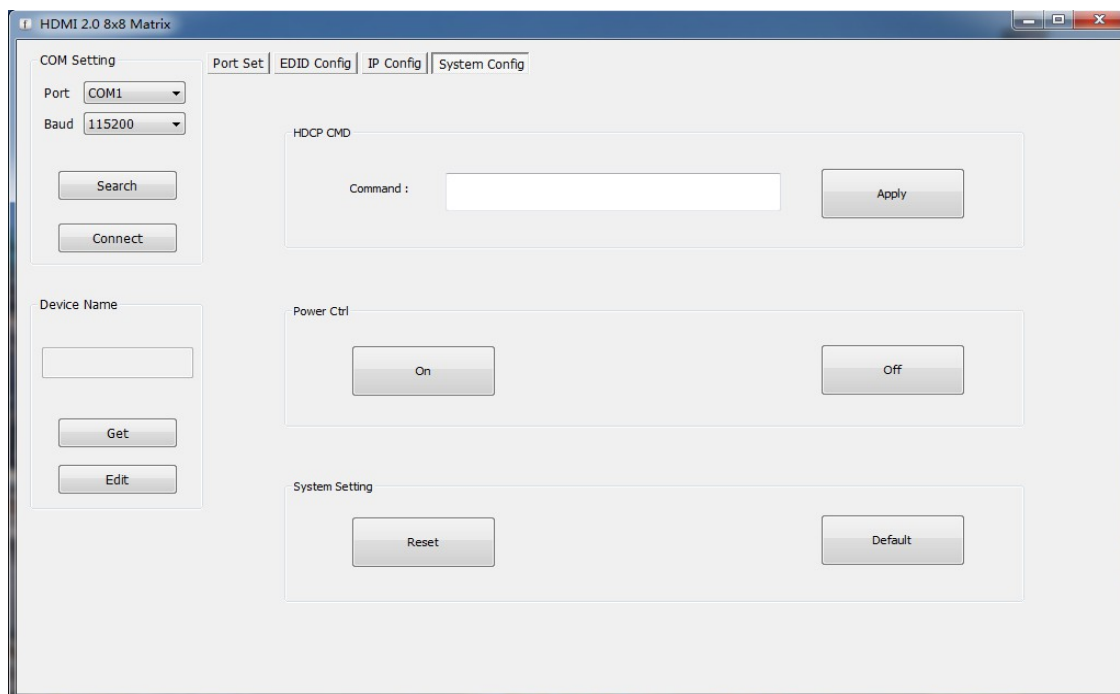
Picture 3

1. MAC address can only be displayed and cannot be modified;
2. If DHCP on: Host IP Address/Net Mask/Router IP Address cannot be modified; otherwise, it can be modified;
3. Click the Get IP Config button to force the current page data to be obtained. If no data is obtained within 2 seconds, it will prompt and terminate the current forced acquisition;
3. Click Save IP Config to Save the modification of current page data.

Note1: the address data box will make regular judgment on the currently modified address data. If the address format is incorrect, a prompt will pop up and cannot be saved.

Note2: DHCP is off. When change the IP. First click Save IP Config to Save the current IP. If DHCP needs to be turned on, please click DHCP again. If the IP is changed and DHCP is ON, the IP setting is invalid.

◆ System Config: CMD; Power; System setting



Picture 4

1. CMD: Internal debugging port.
2. Power Ctrl: On and Off
3. System Setting: Reset and Default

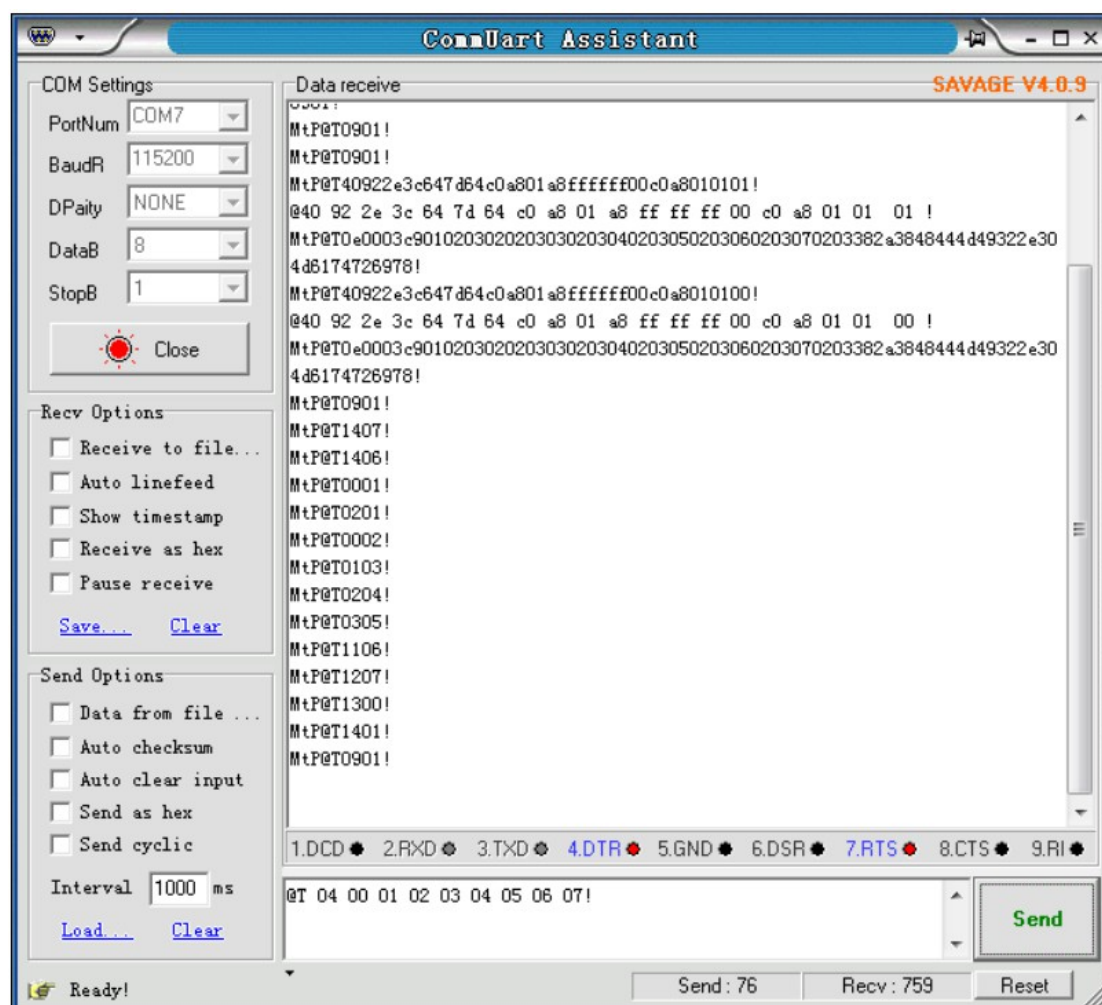
Command Control

1). Open CommUart Assistant.

2). Comport setting:

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

3). Enter Port Command in Send options.



Picture 5

Operating Instruction

4). Command

Command	Function	Note
@T 04 00 01 02 03 04 05 06 07 !	PTP Function	Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc)
@T 50 !	Reboot	

@T 51 !	Restore Factory Setting	
@T 0F 00 !	Standby	00: Standby Mode 01: Cancel “Standby Mode”

5). Select HDMI input for HDMI output

Command	Description
00	Output1
01	Output2
02	Output3
03	Output4
11	Output5
12	Output6
13	Output7
14	Output8
04	All Output
00	Input1
01	Input2
02	Input3
03	Input4
04	Input5
05	Input6
06	Input7
07	Input8

E.g: @T 00 00! : Output 1 display Input1

Output 1 — Input1

6). EDID Setting

@T XX AA BB !:

Parameter Description:

XX for configuration of “**INPUT EDID**”

Command	05	06	07	08	15	16	17	18
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Description	Input1	Input2	Input3	Input4	Input5	Input6	Input7	Input8
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AA for selecting “Video Mode”

Command	00	01	02	03
Description	1080P	4K2K_30	4K2K_60(YC420)	4K2K_60(YC444)

BB for selecting belowing function

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
HDR	48Bit	36Bit	30Bit	7.1CH	5.1CH	2CH	3D
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0

“1” : select the function, “0” : not select the function.

E.g: 11001001: HDR, 48Bit, 7.1CH, 3D

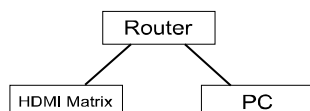
Chang Binary code “11001001” to hexadecimal format “C9”.

E.g: @T 05 03 C9 !

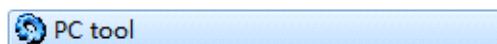
The EDID of input 1 is: 4K2K_60(YC444)、HDR、48Bit、7.1CH、3D.

7.5. Web Control

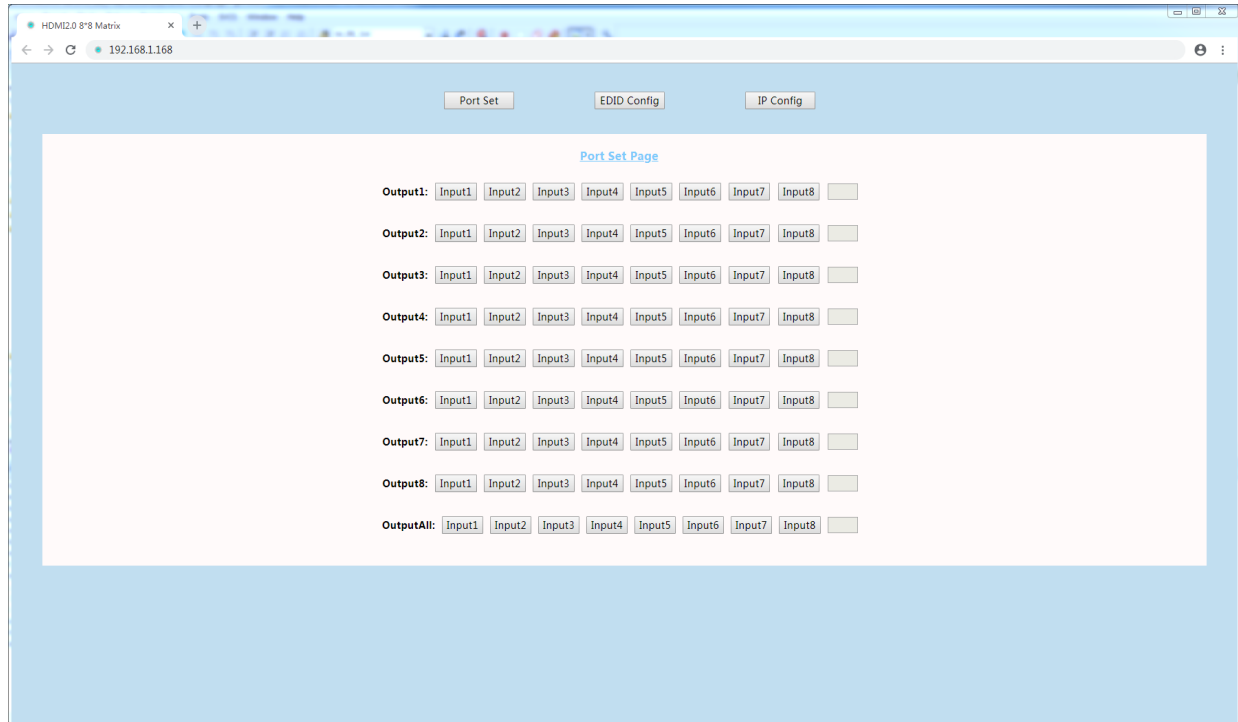
- 1) . Connect the HDMI Matrix and PC to the LAN under the Matrix DHCP Mode.



- 2) . Open the PC tool (included in the CD).



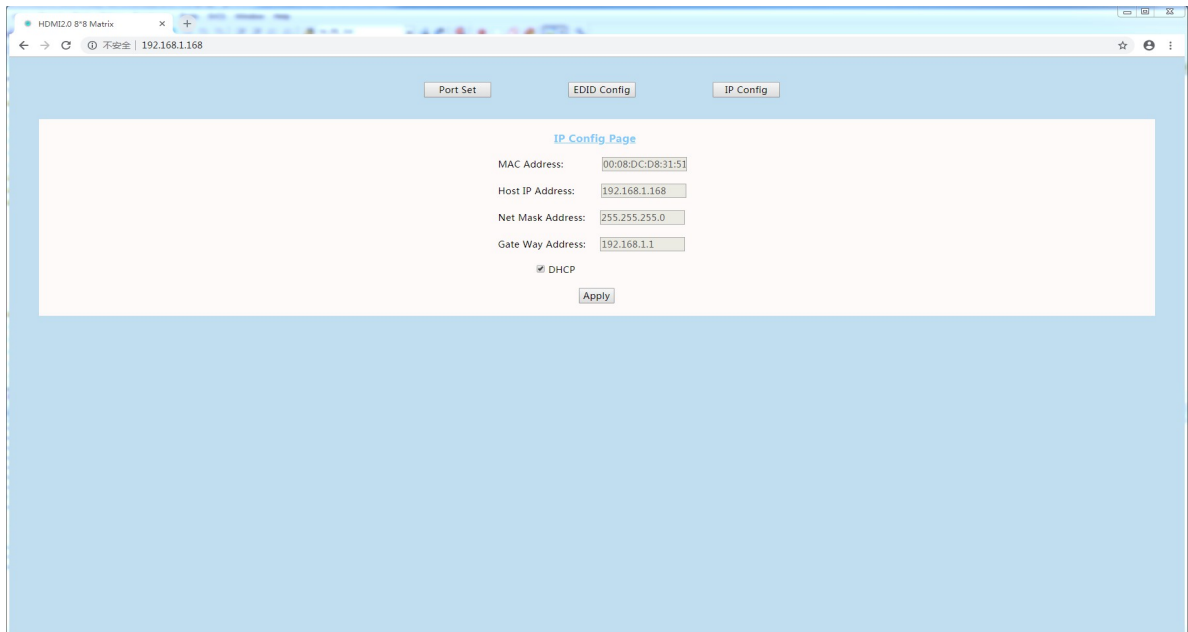
- 3). Search the IP address of HDMI Matrix, please refer to picture 4 & picture 5.
- 4). Open the web browser and enter the IP address you searched, then you can set the function as below pictures:



Picture 6: Port Setting Page

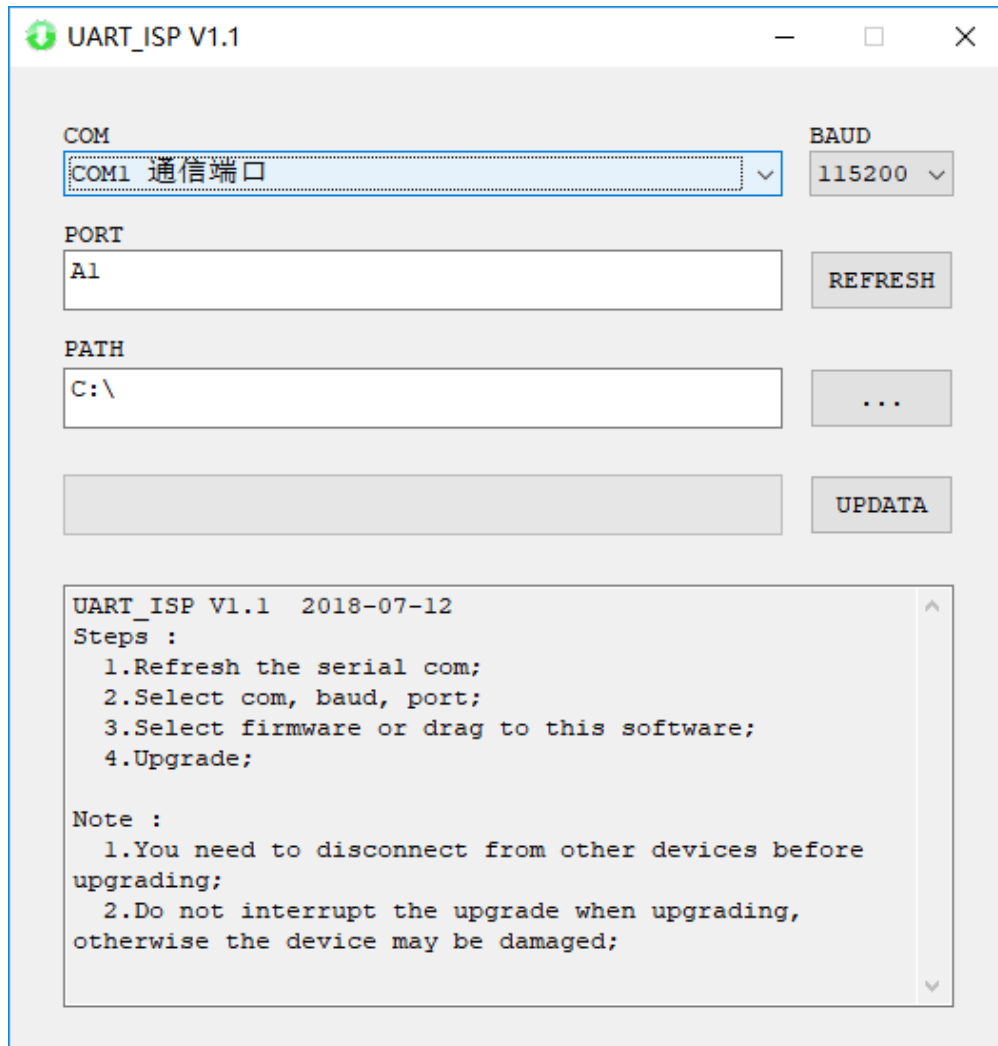


Picture 7: EDID Config Page



Picture 8: IP Config Page

Support program update and provide COM port upgrade system program when product firmware update, repair or function change.
Specific upgrade steps are as follows:



Picture 9: software updated

1. Connect the computer and the product with RS232/Micro USB, open the dedicated upgrade software, and click "Refresh" to Refresh the serial port number;
 - 2.COM port to select the port connected to the product;
 3. The baud rate setting is consistent with the host baud rate (default 115200);
 4. Enter the instructions to be upgraded in the upgrade instruction box (some instructions are as follows)
- A1: MCU update
A1 01: GUI update

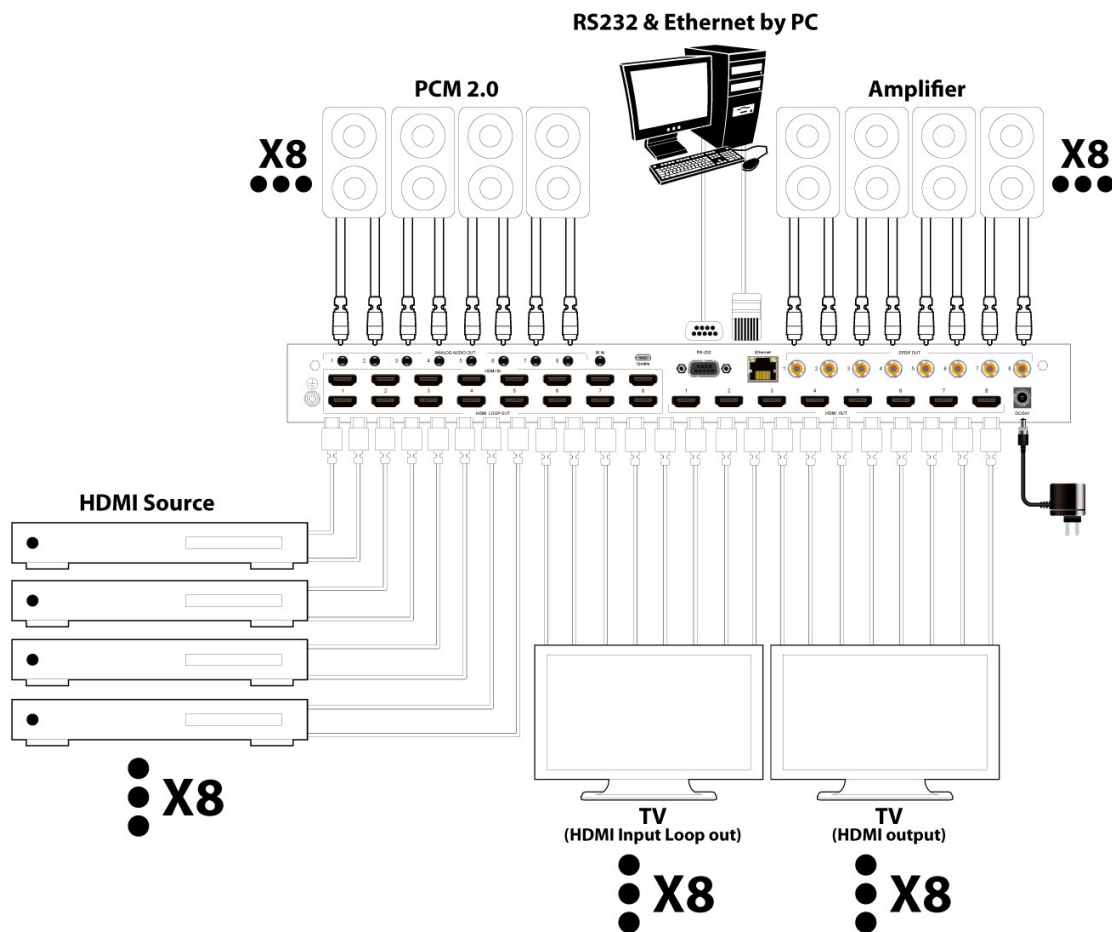
Operating Instruction

F0 01: HTML update

5. Click on the "...Select the downloaded upgrade file;

6. Click "Update" to upgrade the system;
 7. After the upgrade is completed, the "Succeed" message will be prompted in the upgrade information box to indicate that the program has been successfully upgraded.
- Note: if the upgrade progress bar stops at half of the time, the host should be turned off and restarted before serial port upgrade.

8. CONNECTION DIAGRAM



9. MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

10. PRODUCT SERVICE

(1) **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 cabinet damaged.

(2) **Servicing Personal:** Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized service personnel.

(3) **Replacement parts:** Please ensure the defective parts to be replaced by manufacturers or the same specifications as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.

(4) **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

11. WARRANTY: Limited Warranty Limits and Exclusions

- If your product does not work properly because of defective materials or workmanship, our Company (referred to as "the warranter") will, for the length of the period indicated as below, **(Parts(2)Year, Labor(90) Days)** which starts with the date of original purchase ("Limited Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision whether to repair or replace the product will be made by the warranter.
- 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.(Please prepaid and insured for the unit and then ensure it was packed carefully in the original carton. Besides, detailed complaint description and your contact information should be attached in it.)This Limited Warranty is only valid for the original purchaser and only covers the newly purchased product. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.
- This Limited Warranty ONLY COVERS failures result from defective materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage.
- The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damages that caused by acts of God.
- THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (for example, it excludes damages for lost time, cost of someone remove or re-install an installed unit that was applicable, round trips, loss of or damage to media or images, data or other recorded content. Please note that the items listed above are not exclusive, but only for illustration)
- THE PURCHASER OR USERS SHOULD TAKE RESBONSIBILITY FOR

PARTS AND SERVICE THAT DOES NOT COVERED IN THIS LIMITED WARRANTY .