

# 8x8 HDMI2.0 Matrix

## Support 4K@60hz YUV4:4:4, 18Gbps, HDR

### Operating Instruction



**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.**

## **SURGE PROTECTION DEVICE RECOMMENDED**

**This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.**

## Table of Contents

|   |           |
|---|-----------|
| <b>1. Features.....</b>                   | <b>4</b>  |
| <b>2. Package Contents.....</b>           | <b>4</b>  |
| <b>3. Specifications.....</b>             | <b>4</b>  |
| <b>4. Panel Descriptions.....</b>         | <b>5</b>  |
| <b>5. Connecting and Operating.....</b>   | <b>7</b>  |
| <b>6. Application Diagrams.....</b>       | <b>7</b>  |
| <b>7. Remote Control Description.....</b> | <b>8</b>  |
| <b>8. RS232 Pin Assignment.....</b>       | <b>8</b>  |
| <b>9. RS232 Control.....</b>              | <b>9</b>  |
| <b>9.1 Software Control.....</b>          | <b>9</b>  |
| <b>9.2 Command Control.....</b>           | <b>12</b> |
| <b>10. Web Control.....</b>               | <b>15</b> |
| <b>Warranty Policy.....</b>               | <b>17</b> |

## Dear Customer

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.

### 1. Features

- HDMI 2.0 version (Support 4K@60Hz YUV4:4:4)
- Support 3D
- Bandwidth upto 18Gbps
- HDCP2.2 input ,HDCP2.2 output
- HDCP1.4 input, HDCP1.4 output
- Support HDR10
- 8xHDMI Input, 8xHDMI output with 8xSPDIF Audio
- Any one of the 8 Ultra HD sources to any one of the 8 Ultra HD displays
- Support Panel Button, Local IR, RS232 Control with command, IP Control, Web GUI Control
- Support Dolby True HD and DTS-HD master audio
- 1U rack design, easy installment
- Unit size: L440XW220XH44.5mm

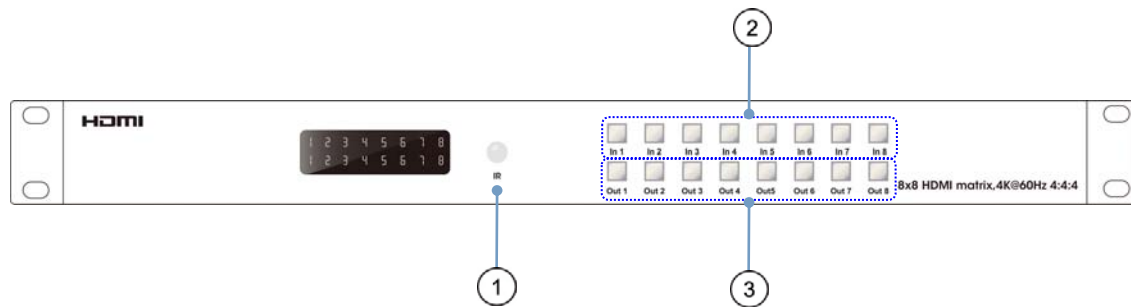
### 2. Package Contents

- 1). 1x HDMI Matrix
- 2). 1x 12V DC power supply
- 3). 1x Remote control
- 4). 1x IR Ext RX Cable
- 5). 1x mounting kit
- 6). 1x CD for control software & user manual

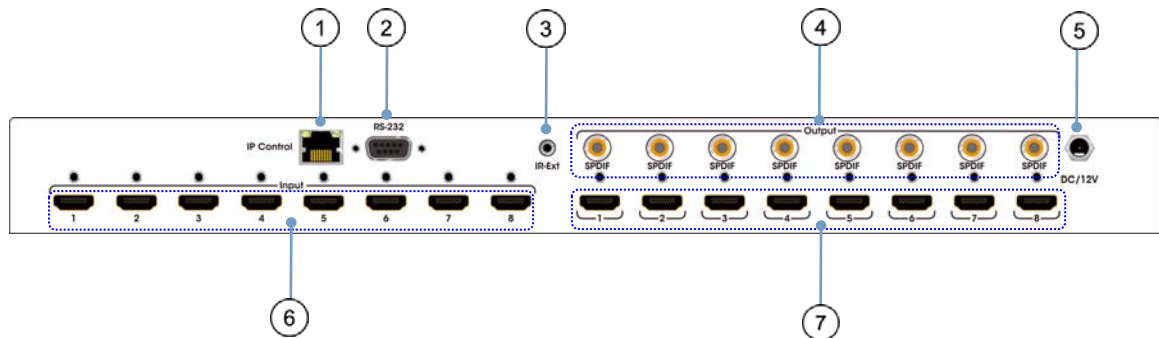
### 3. Specifications

|                            |  |
|----------------------------|--|
| 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  |
| 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  |
| Rack-Mountable             | Rack ears included   |
| Dimensions(WxHxD)          | L440XW220XH44.5mm  |
| Net Weight                 | 2.8kg  |
| Operating Temperature      | -4°F to 140°F (-20°C to 60°C)  |
| Storage Temperature        | -40°F to 158°F (-40°C to 70°C)   |
| Power consumption          | 19W(Max)   |

## 4. Panel Descriptions



- ① IR receive window.
- ② Input button IN1~8: choose the desired input port from ports 1~8.
- ③ Output button OUT1~8: choose the desired output port from ports 1~8.



- ① IP control.
- ② RS232 for control.
- ③ For IR external receiver cable.
- ④ SPDIF Audio output.
- ⑤ DC power input.
- ⑥ HDMI input port.
- ⑦ HDMI output port.

**Check the EDID Information by Panel button**

① Press “In4” for 3 seconds ,then press “In1” or “Out1” to check the EDID information for each HDMI input.



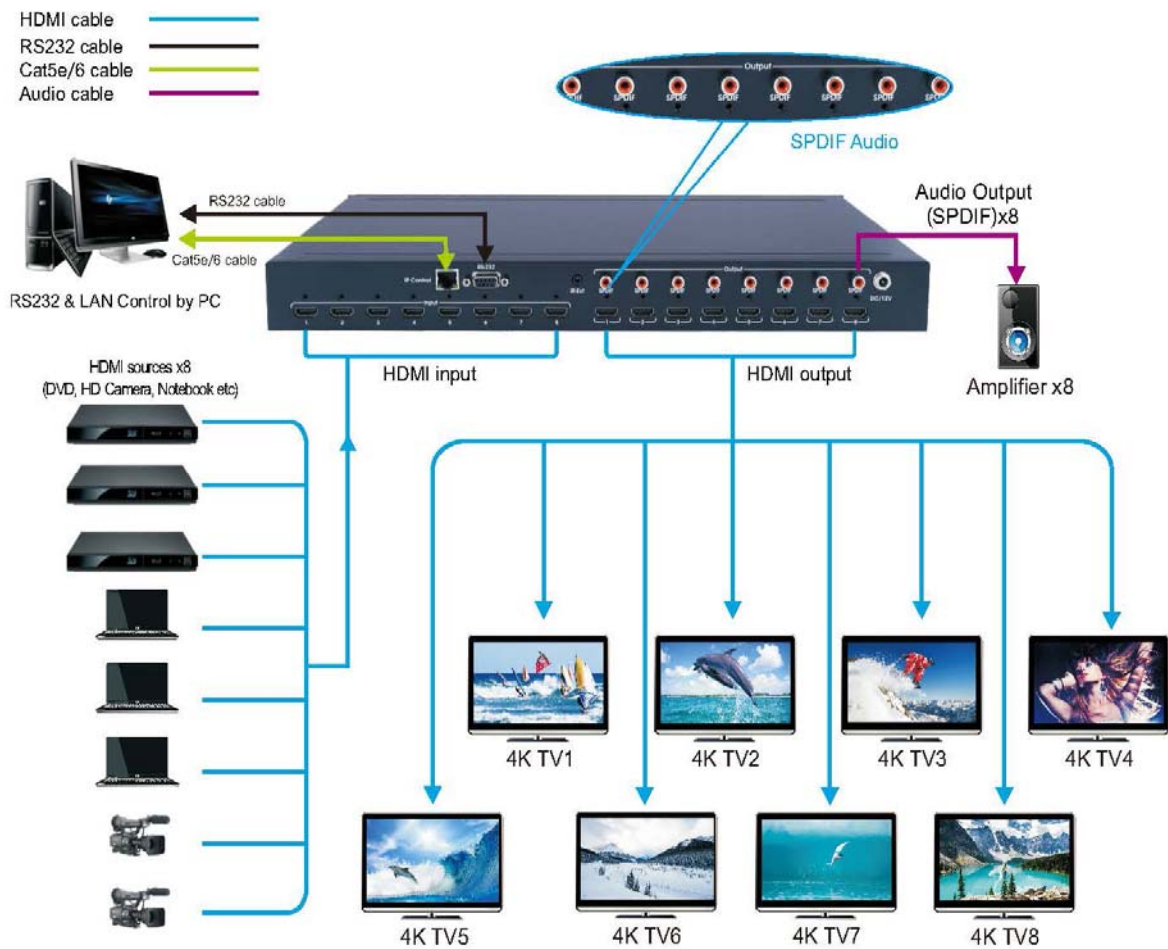
② Press “In5” for 3 seconds, then press “In1” or “Out1” to check the device name , IP address and DHCP status.



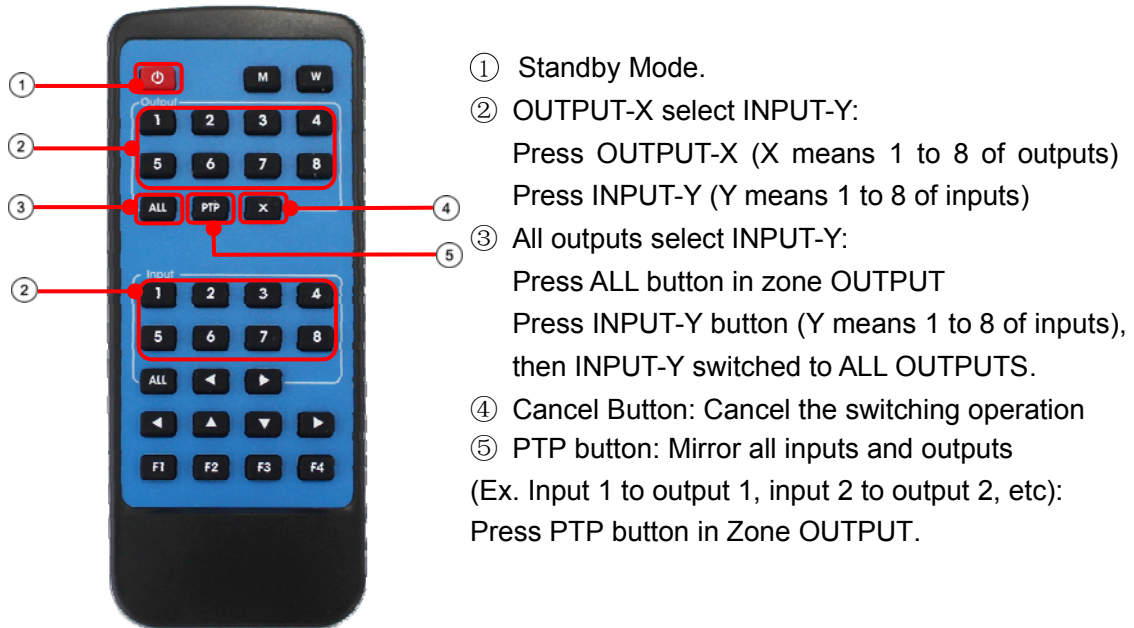
## 5. Connecting and Operating

1. Connect source devices to input ports of the matrix
2. Connect HDMI output ports to TV or other HDMI sink devices.
3. Optional: connect RS232 cable from PC RS232 port.
4. Optional: connect an Ethernet cable from the TCP/IP port on the matrix to a local area network.
5. Connect 12V POWER supply to DC power socket.
6. Power on the matrix, HDMI sources and displays.

## 6. Application Diagram



## 7. 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.

## 8. RS232 Pin Assignment

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

Baud Rate: 115200 bps

Data Bits: 8 bit Parity: None Stop Bit: 1 bit

Flow Control: None



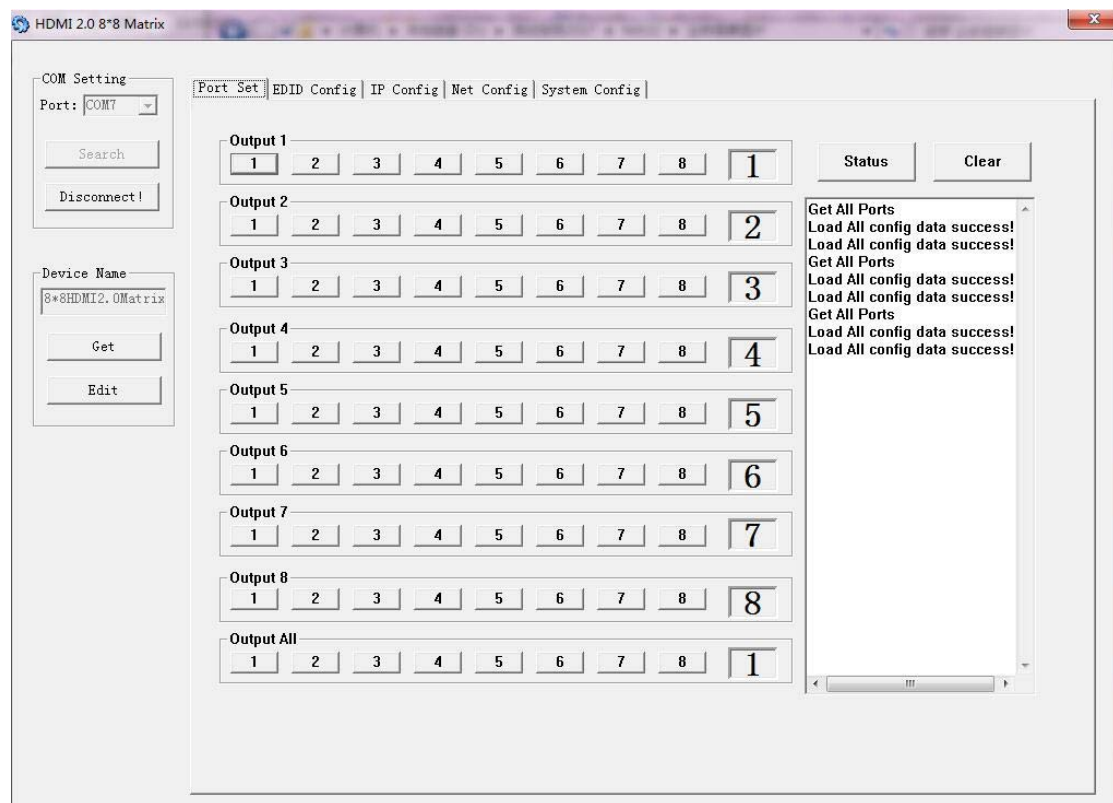
## 9. RS232 Control

### 9.1 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.

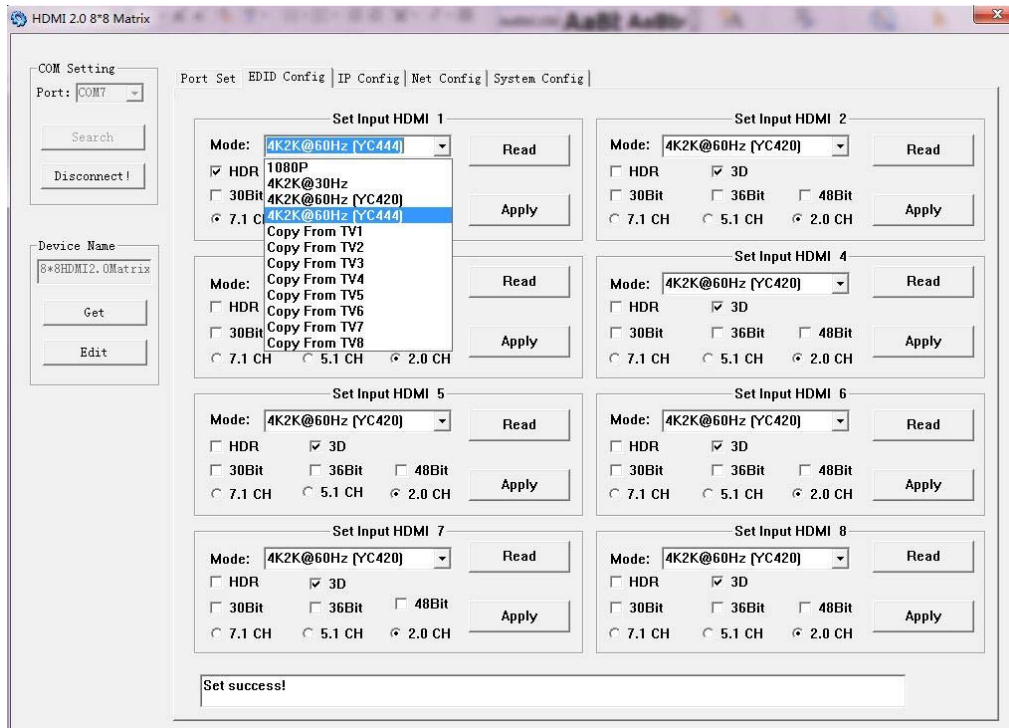
On this COM setting session, you can also change the Device name, Device name support up to 16 characters. Save or edit your status by clicking the Edit button.

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.



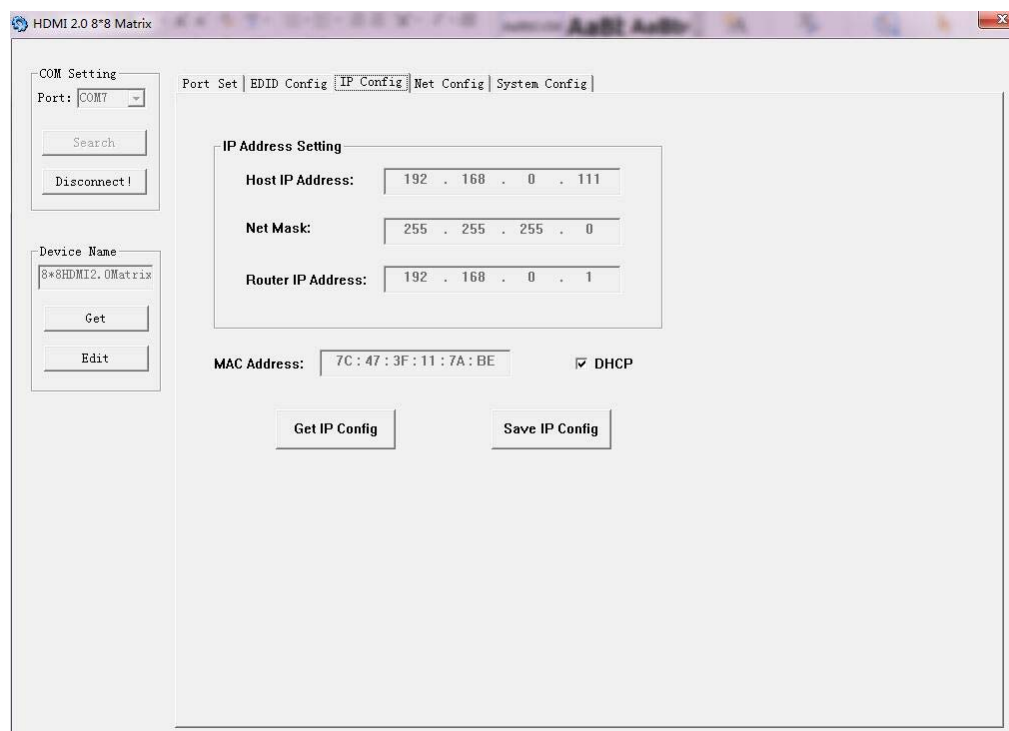
Picture 1

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



Picture 2

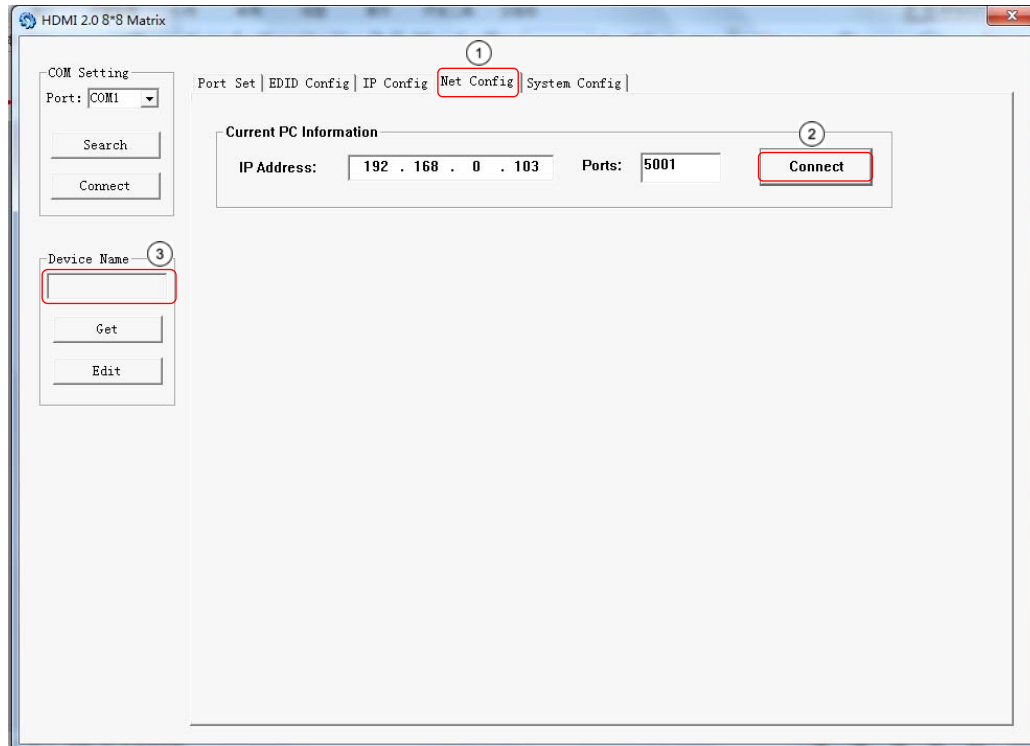
The IP configure session helps to read and configure the IP address and MAC of the Matrix. Check DHCP if you want the router assign an automatic IP for the Matrix.



Picture 3

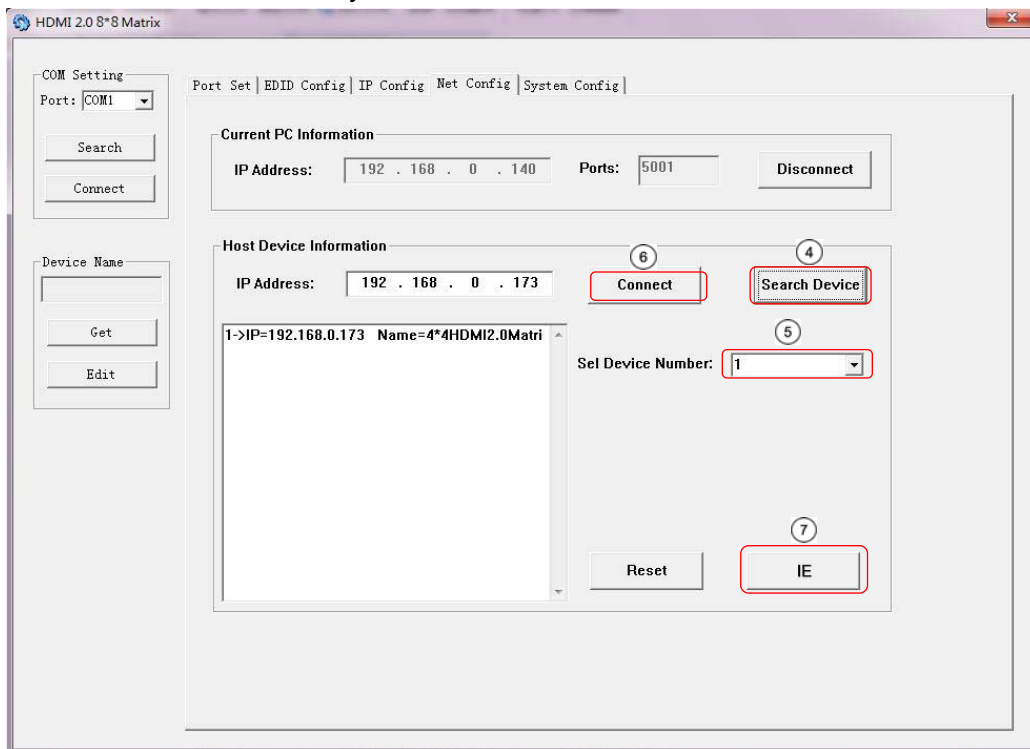
The Net Config session allows us to configure the PC and Matrix in the same LAN with the IP Address and connection.

Click “Net config” → “Connect” → “Search Device” → “Sel Device Number” → “Connect” then you can see the device name, it means connect successfully.



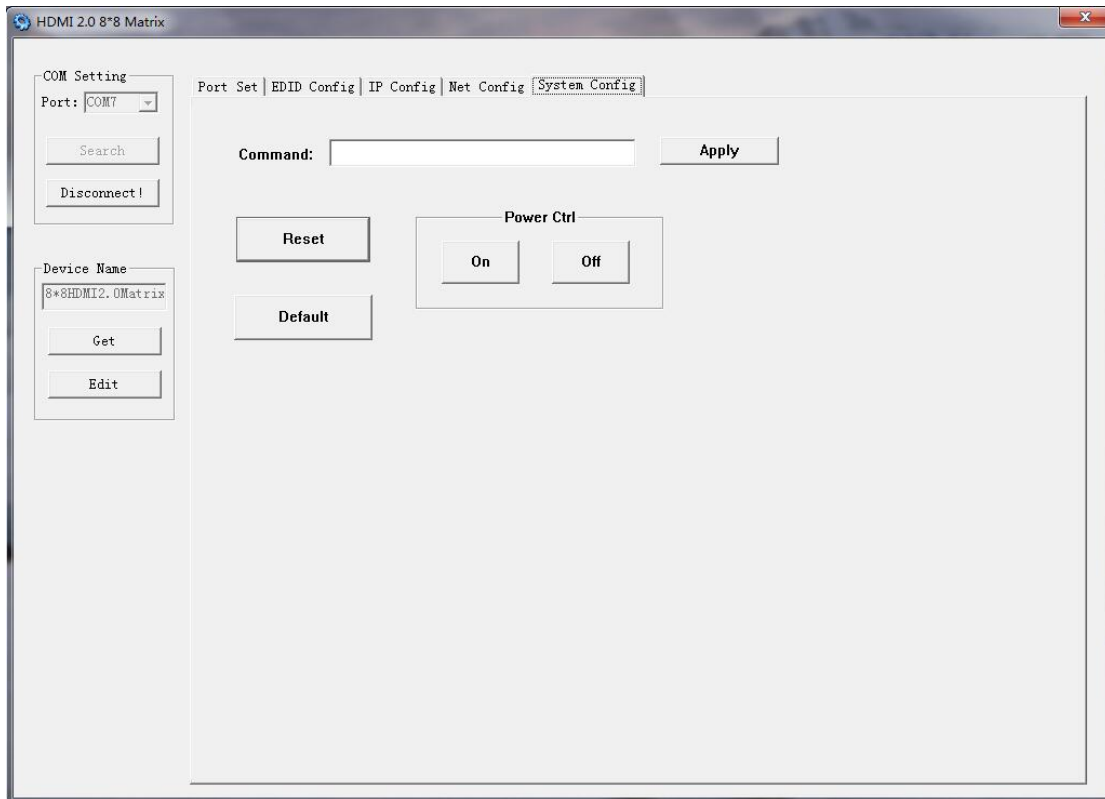
Picture 4

You can also click “IE”, easy and click to enter into web.



Picture 5

The last session is System Config, which allows power ON/OFF or reset, default the Matrix.



Picture 6

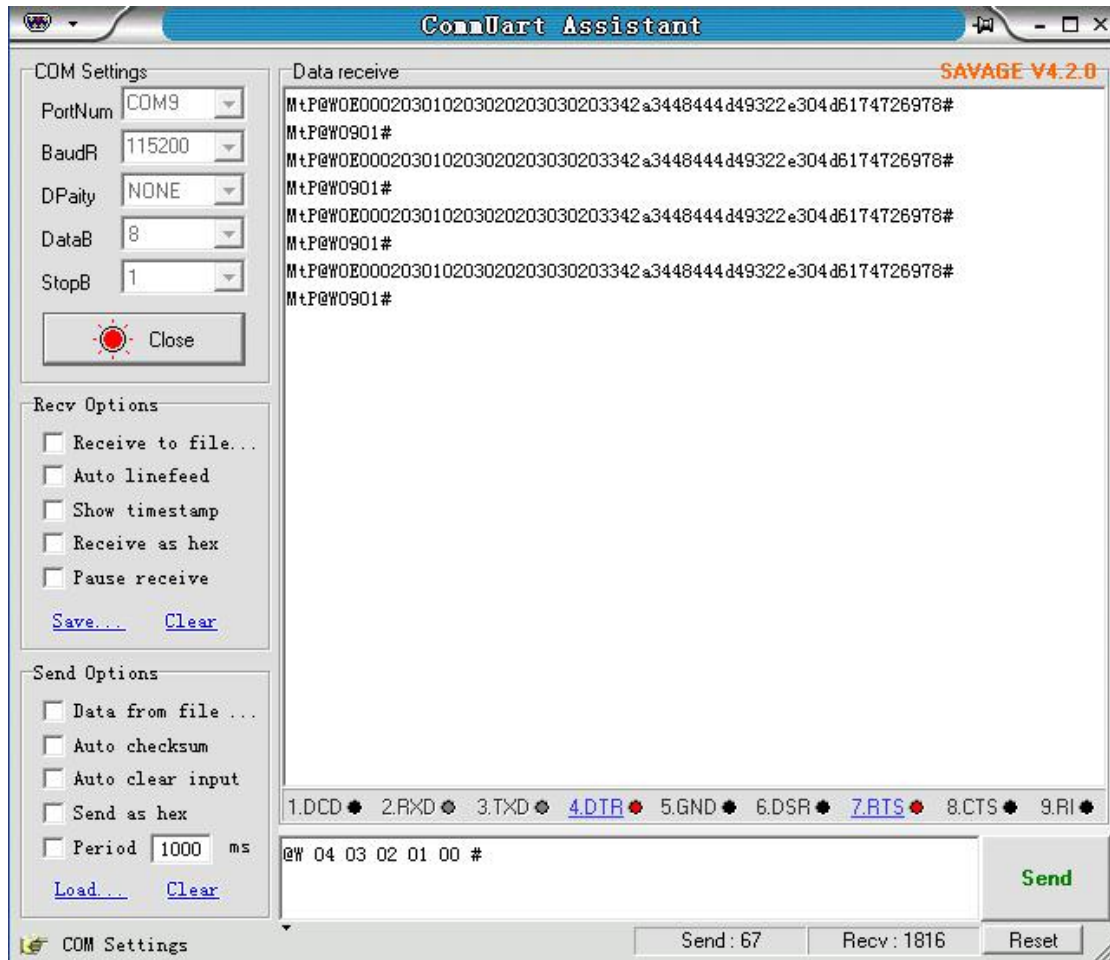
## 9.2 Command Control

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 7

4). Command

| Command                            | Function                | Note   |
|------------------------------------|-------------------------|--|
| @W 04 00 01 02 03 04<br>05 06 07 # | PTP Function            | Mirror all inputs and outputs<br>(Ex. Input 1 to output 1, input 2 to output 2, etc) |
| @W 50 #                            | Reboot                  |  |
| @W 51 #                            | Restore Factory Setting |  |
| @W 0F 00 #                         | Standby                 | 00: Standby Mode<br>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: @W 00 00 #: Output 1 display Input1



6). EDID Setting

@W XX AA BB #:

Parameter Description:

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

| Command     | 05     | 06     | 07     | 08     | 15     | 16     | 17     | 18     |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Description | Input1 | Input2 | Input3 | Input4 | Input5 | Input6 | Input7 | Input8 |

**AA** for selecting “Video Mode”

|             |               |               |                |                |
|-------------|---------------|---------------|----------------|----------------|
| Command     | 00            | 01            | 02             | 03             |
| Description | 1080P         | 4K2K_30       | 4K2K_60(YC420) | 4K2K_60(YC444) |
| Command     | 04            | 05            | 06             | 07             |
| Description | Copy From TV1 | Copy From TV2 | Copy From TV3  | Copy From TV4  |
| Command     | 08            | 09            | 0a             | 0b             |
| Description | Copy From TV5 | Copy From TV6 | Copy From TV7  | Copy From TV8  |

**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

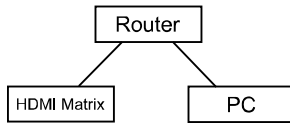
Chang Binary code “11001001” to hexadecimal format “C9”.

E.g: @W 05 03 C9 #

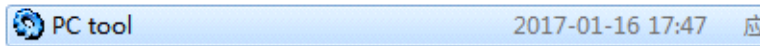
The EDID of input 1 is: 4K2K\_60(YC444)、HDR、48Bit、7.1CH、3D.

## 10. Web Control

1). Connect the HDMI Matrix and PC to the LAN.

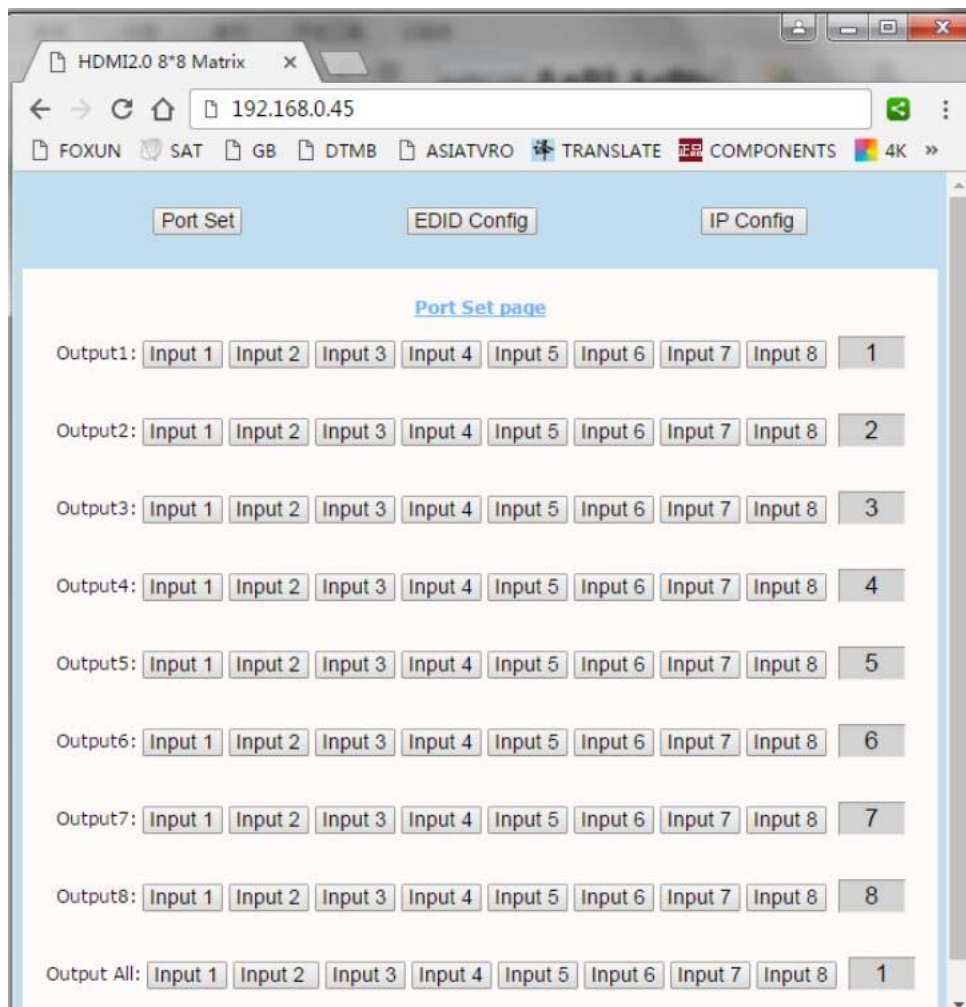


2). Open the PC tool (included in the CD).



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 8: Port Setting Page



Picture 9: EDID Setting Page



Picture 10: IP Configuration Page



## MAINTENANCE

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

## PRODUCT SERVICE

### (1) **Damage requiring service:**

The unit should be serviced by qualified service personnel if:

- (a) The DC power supply cord or AC adaptor has been damaged;
- (b) Objects or liquids have gotten into the unit;
- (c) The unit has been exposed to rain;
- (d) The unit does not operate normally or exhibits a marked change in performance;

The unit has been dropped or the cabinet damaged.

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

(3) **Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics 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.

## WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor" ) 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 or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor.

During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

## MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

## LIMITED WARRANTY LIMITS AND EXCLUSIONS

1) This Limited Warranty ONLY COVERS failures due to defects in 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 damage that is attributable to acts of God.

2) 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 WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

3) PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.