

# SM-4X4-4K18GB-LC

## Low Cost 4K HDMI Video Matrix Switch: 4x4

### 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.**

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## 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

- 4xHDMI input, 4xHDMI output, any one of the 4 sources to any one of the 4 Displays.
- HDMI2.0 Version (4K@60HZ YUV4:4:4)
- Data transmission bandwidth up to 18 GBPS
- Support HDR.
- Support HDCP2.2 input, HDCP2.2 output
- Support Panel button, Local IR, IR routing, RS232 control and Web GUI Control
- Support EDID management functions
- Support Dolby TrueHD and DTS-HD Matter audio
- 1U rack design, easy installation
- Unit size: L438XW220XH44 mm.

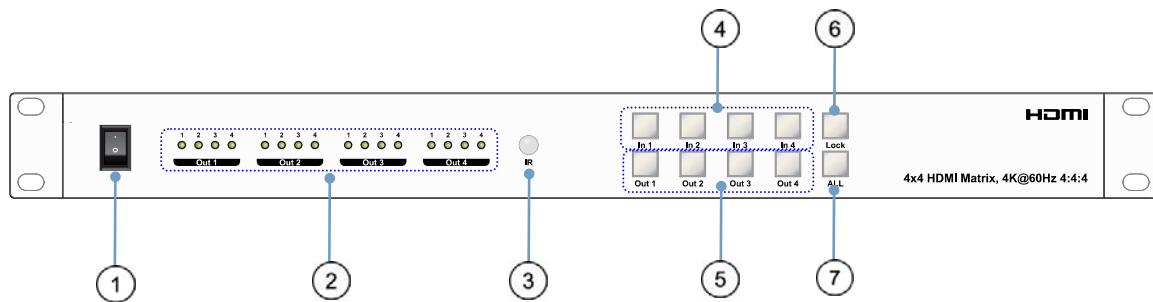
### 2. Package Contents


- 1). 1x HDMI Matrix
- 2). 1x 12V DC power supply
- 3). 1x Remote control
- 4). 4x IR TX cable
- 5). 4x Wide Band IR RX Cable (38khz-56khz)
- 6). 1x 38khz IR Ext RX Cable
- 7). 1x mounting kit

### 3. Specifications

Bandwidth	18 Gbps
Resolution	480p,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	4xHDMI Type A, 19-pin, female
Video Output Connectors	4xHDMI Type A, 19-pin, female
RS-232 serial port	DB-9, female
Ethernet port (IP control)	RJ-45, female
IR Input ports	5x3.5mm stereo jack
IR Output ports	4x3.5mm stereo jack
Rack-Mountable	Rack ears included
Dimensions(WxHxD)	L438XW220XH44 mm
Net Weight	2.68 kg
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Power consumption	12W(Max)

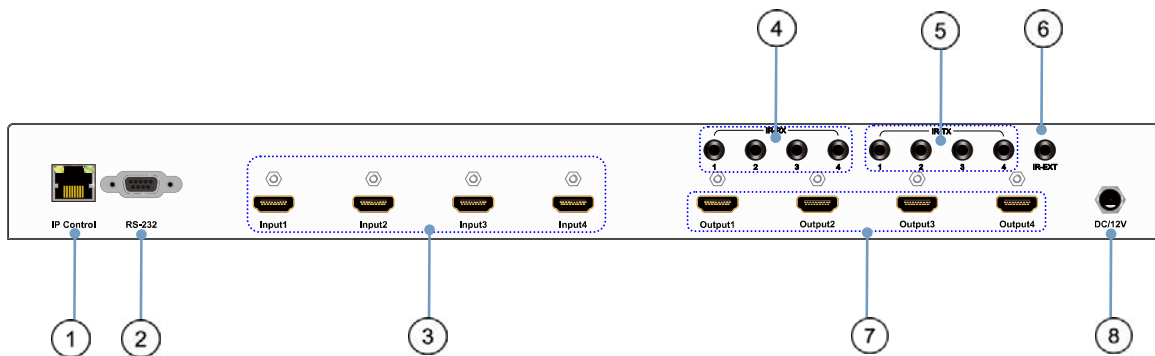
## 4. Panel Descriptions



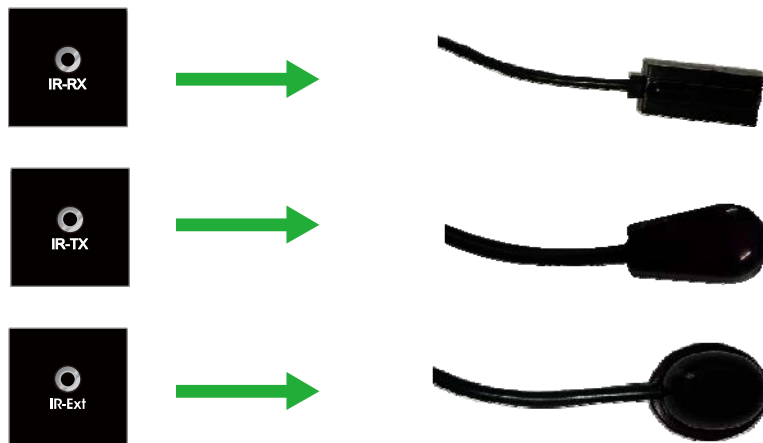
- ① Power on/off.
- ② These LED indicates the status of each output selection.
- ③ IR receive window.
- ④ Input button IN1~4: choose the desired input port from ports 1~4.
- ⑤ Output button OUT1~4: choose the desired output port from ports 1~4.
- ⑥ Lock: Press this button, then all the button on the unit is useless, which mean all the buttons locked  Note
- ⑦ ALL: Press this button to set all the outputs to display with the same input. First press the “ALL” button then press an input number to confirm the selection.



Note The “Lock” button will light when all the buttons are locked.



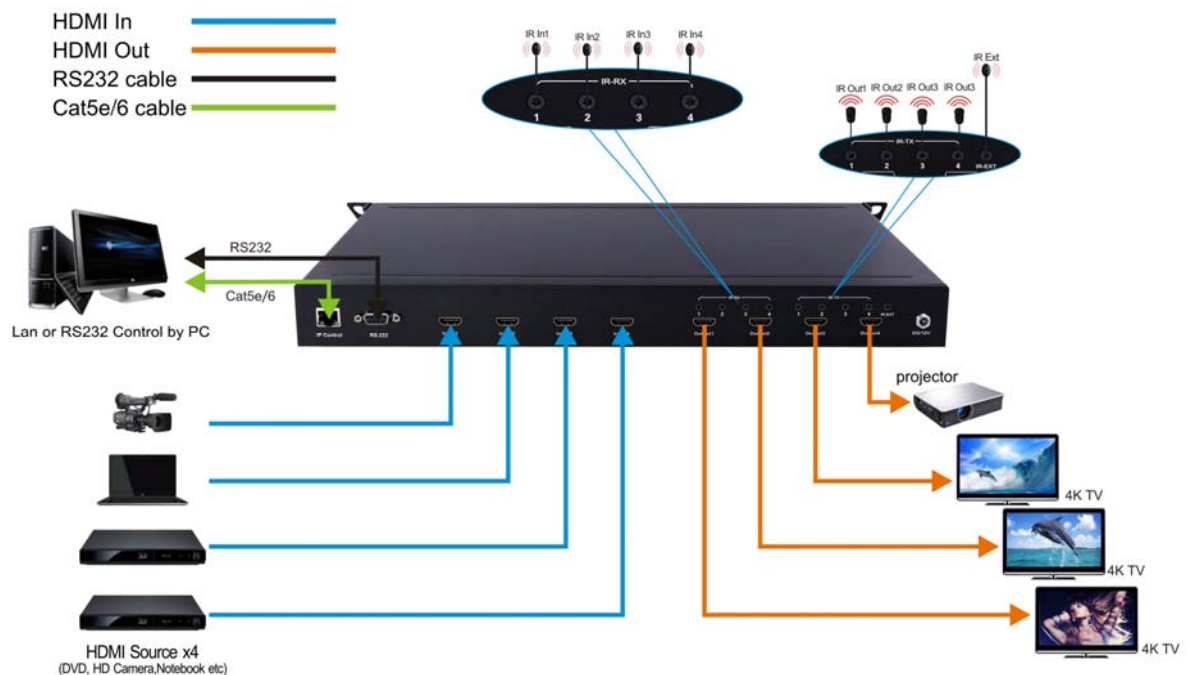
- ① LAN port.
- ② RS232 port.
- ③ HDMI input port.
- ④ IR-RX.
- ⑤ IR-TX.
- ⑥ IR-Ext.
- ⑦ HDMI output port.
- ⑧ Power input: 12V



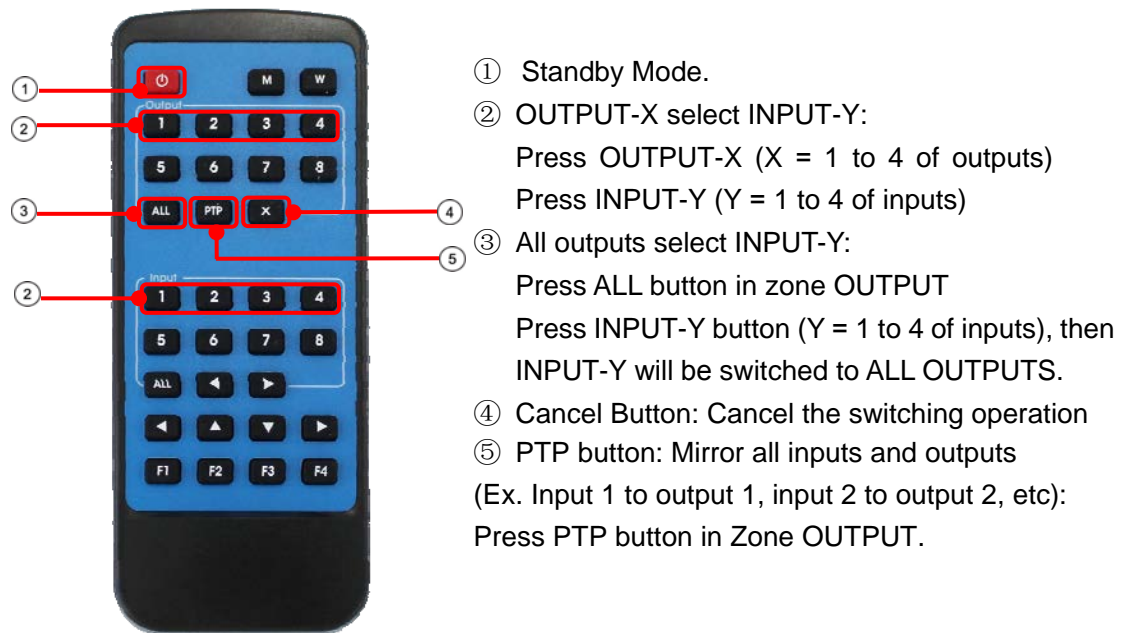
## 5. Connecting and Operating

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



## 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

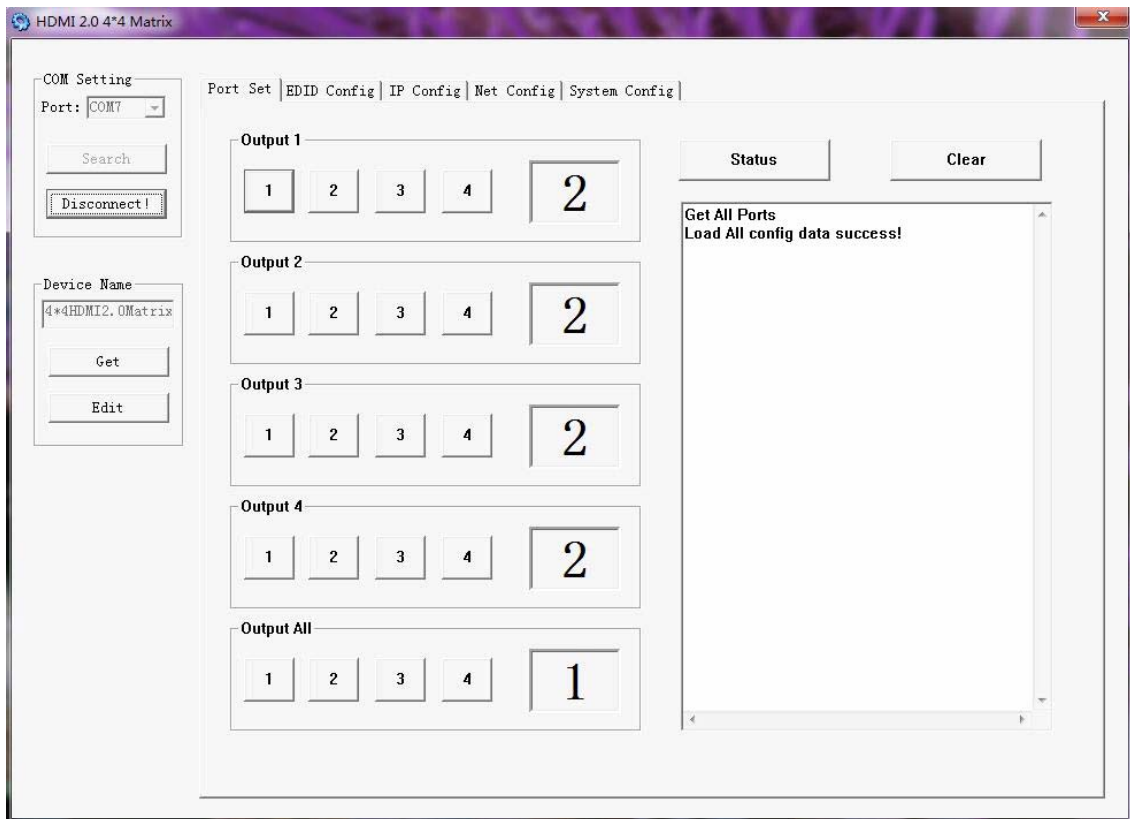
## 9. RS232 Control

### 9.1 Software control

Connect the 4x4 Matrix to PC with a RS232 cable, download and 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.

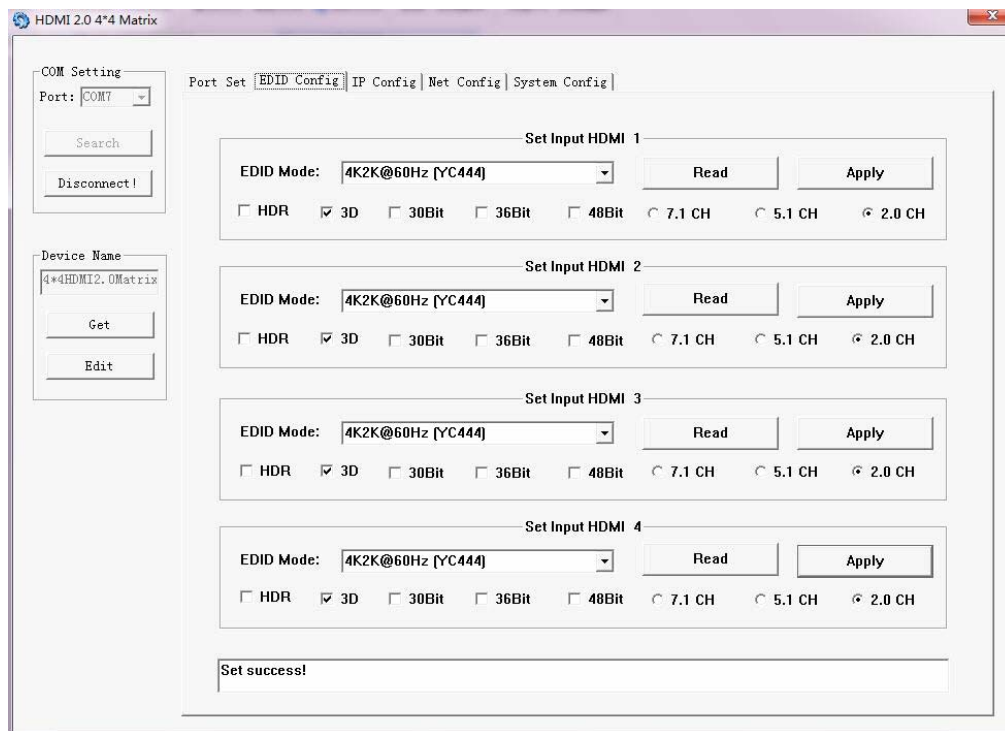
Come to Port Set session to select or switch your input sources for each output, We can read the current status by clicking the "Status" button, or Clear our historical operating record by clicking "Clear" button. The right down blank shows the operating history.



Picture 1

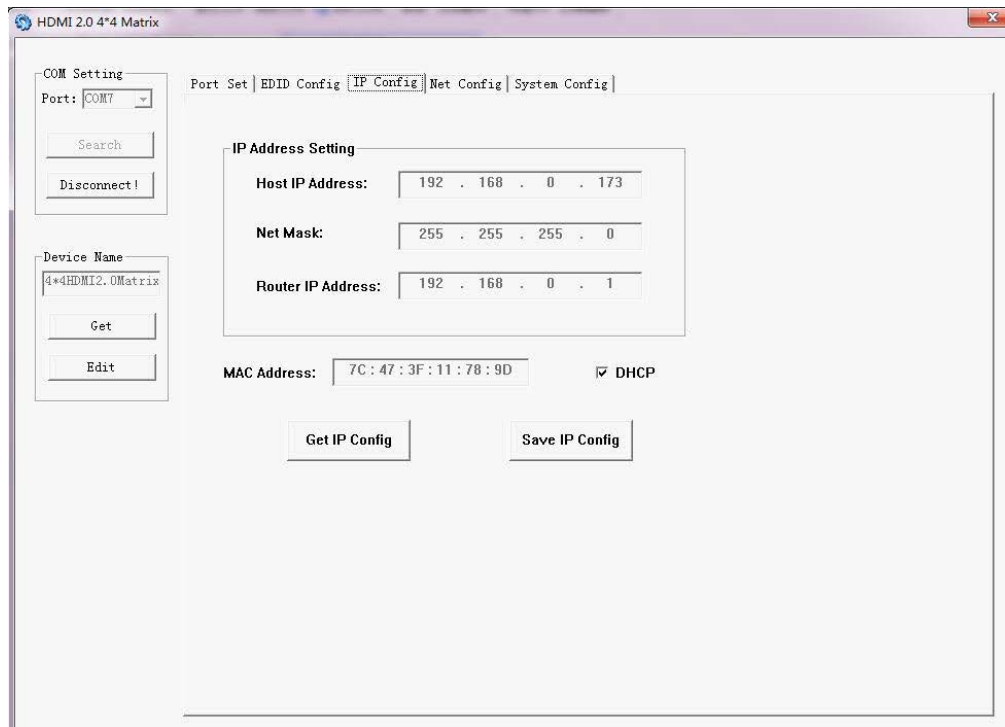


The EDID session helps us to Read and Configure EDID for each input, such as HDR, 3D, Data rates and Audio channel.



Picture 2

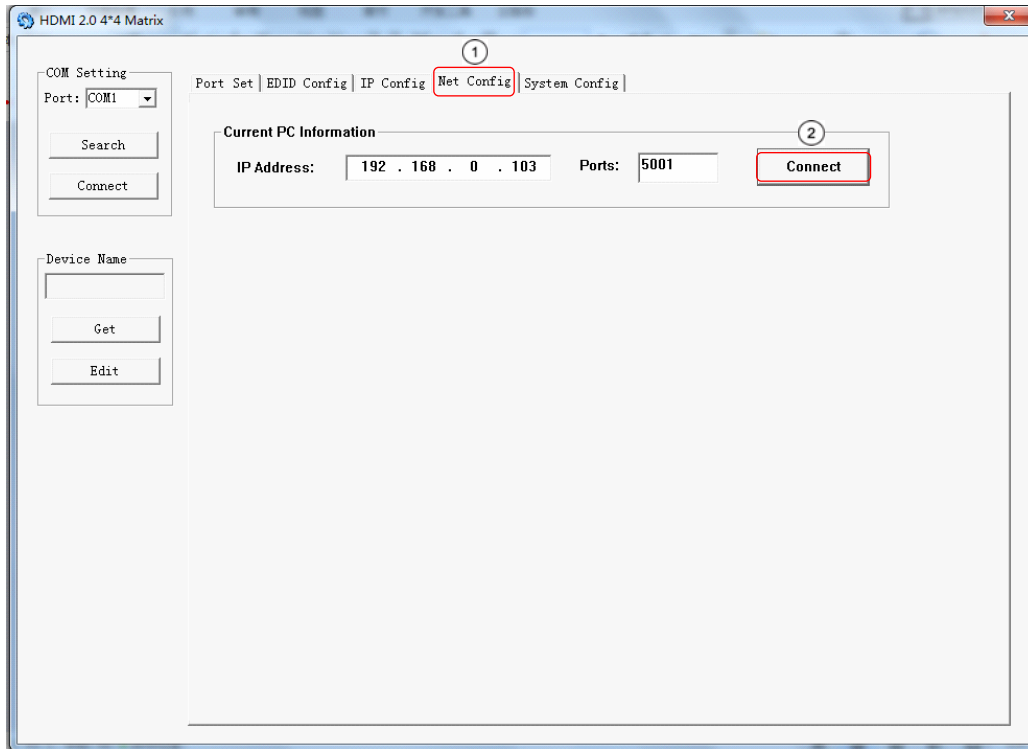
The IP configure session helps to read and configure the IP address and MAC of the Matrix. Check DHCP if you want the router to automatically assign an IP for the Matrix.



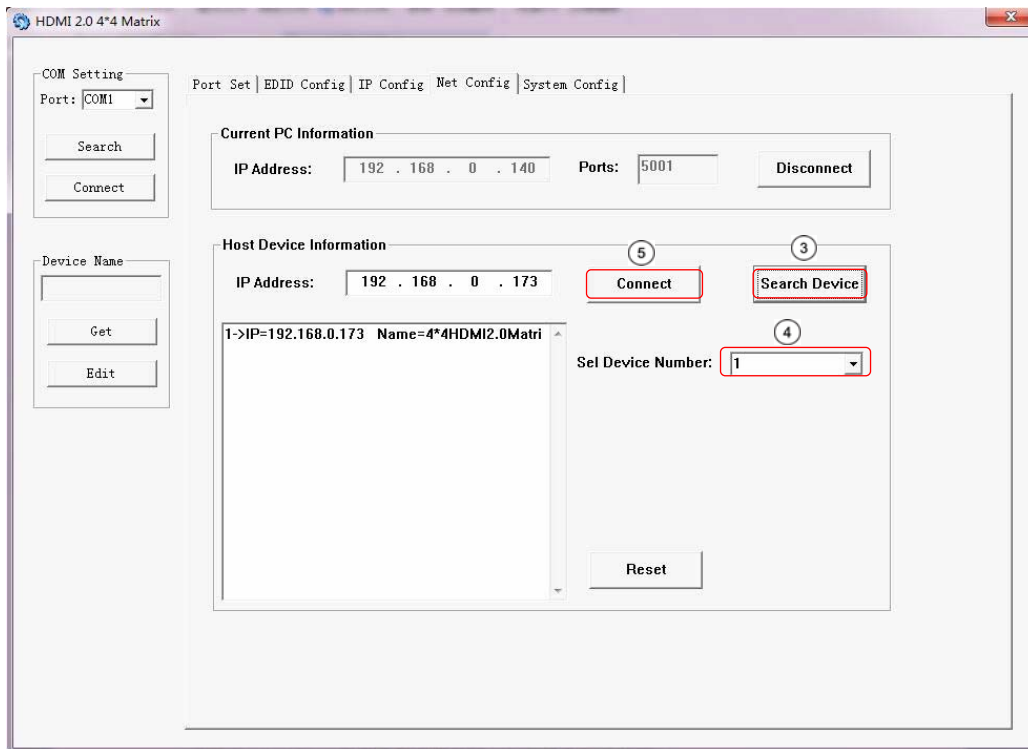
Picture 3

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”

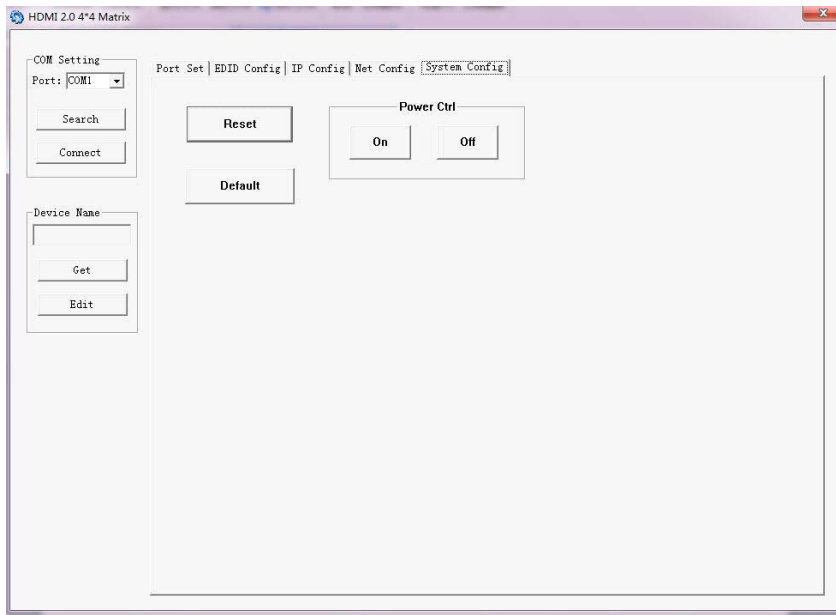


Picture 4



Picture 5

The last session is System Config, which allows power ON/OFF, system reset, or Default Reset of the Matrix.



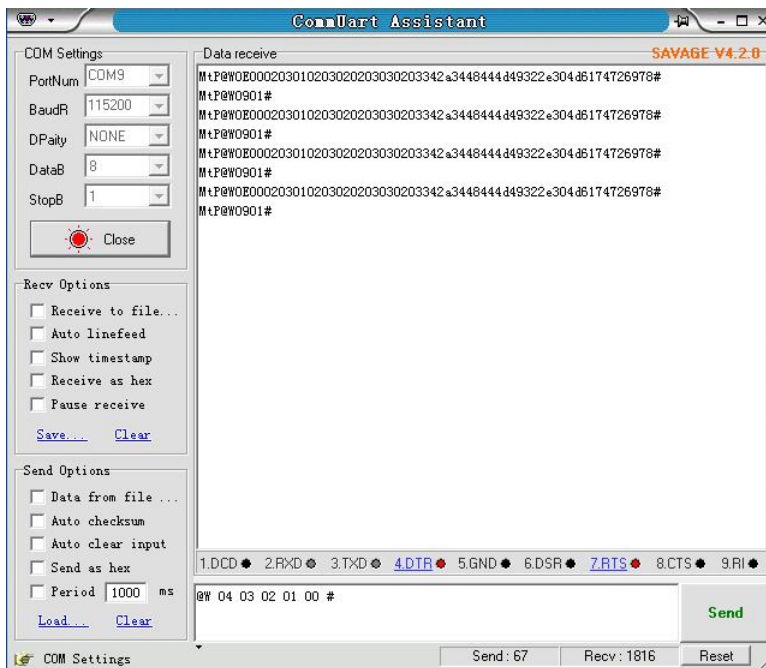
Picture 6

## 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 #	PTP Function	Mirror all inputs and outputs (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 01: Cancel "Standby Mode"

5). Select HDMI input for HDMI output

Command	Description
00	Output1
01	Output2
02	Output3
03	Output4
04	All Output
00	Input1
01	Input2
02	Input3
03	Input4

E.g: @W 00 00 #: Ouput 1 display Input1



6). EDID Setting

@W XX AA BB #:

Parameter Description:

**XX** for configuration of "INPUT EDID"

Command	05	06	07	08
Description	Input1	Input2	Input3	Input4

**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" : choose with the function, "0" : doesn't choose with out the function.

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

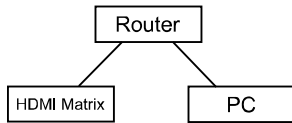
Chang Binary code "11001001" to hexadecimal format "C9".

E.g: @W 05 03 C9 #

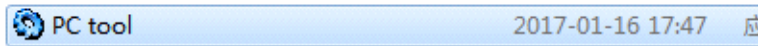
The EDID of input 1 is: 4K2K\_60(YC444)、HDR、48Bit、7.1CH、3D.

## 10. Web Control

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

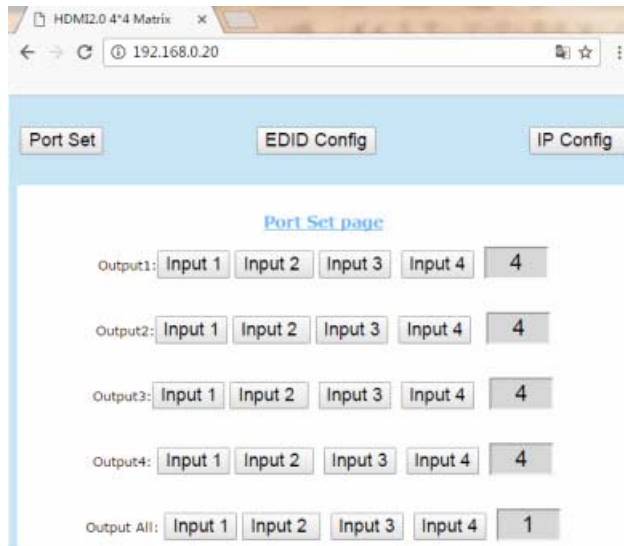


2). Open the PC tool (downloaded from our website).

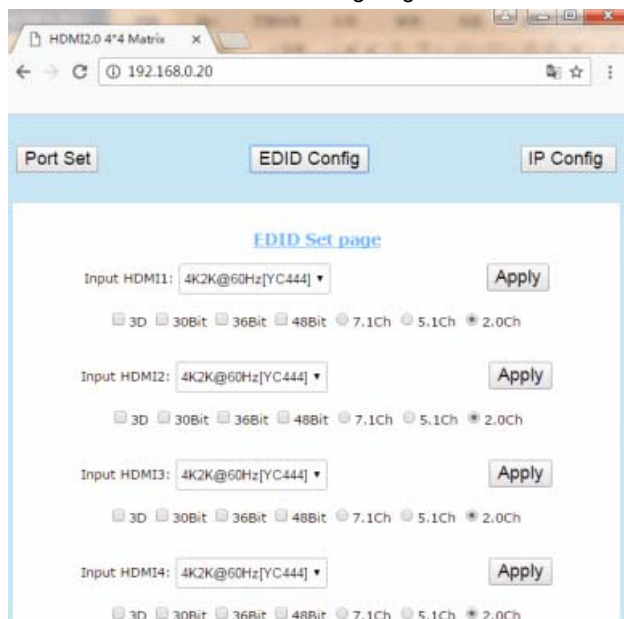


3). Search the IP address of HDMI Matrix, please refer to picture 4 & picture 5.

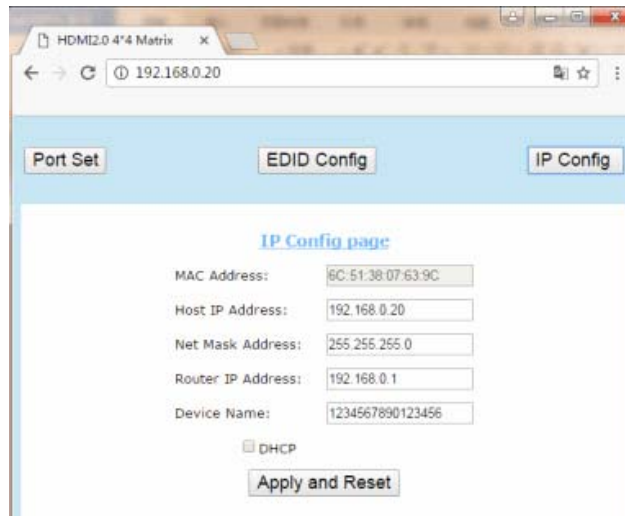
4). Open the web browser and enter the IP address you searched, then you can set the function as indicated in the pictures below:



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.

## Application Note:

When using the SM-4X4-4K18GB-LC in conjunction with the ST-C64K-300 4K HDMI 300 foot extender, you will need to set each Input on the SM-4X4-4K18GB-LC that will supply video to the extended output(s) to "4K2K@30Hz".

