SM-4X4-4K18GBA-LC

4x4 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

Dear Customer

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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
- 4xHDMI Input, 4xHDMI output with 4xSPDIF Audio
- Any one of the 4 Ultra HD sources to any one of the 4 Ultra HD displays
- Support Panel Button, Local IR, RS232 Control with command, IP Control, Web GUI Control
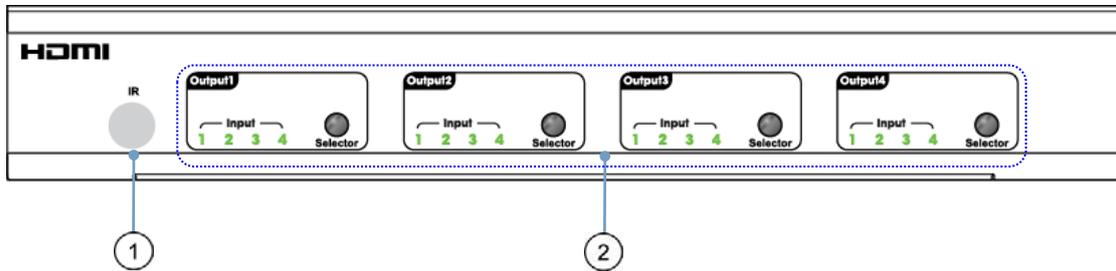- Support Dolby True HD and DTS-HD master audio
- Unit size: L216XW105XH34mm

2. Package Contents

1). 1x HDMI Matrix
2). 1x 5V DC power supply
3). 1x Remote control
4). 1x IR Ext RX Cable
5). 1x Phoenix plugs for RS232 cable termination
6). 1x mounting kit
7). 1x CD for control software & user manual

3. Specifications

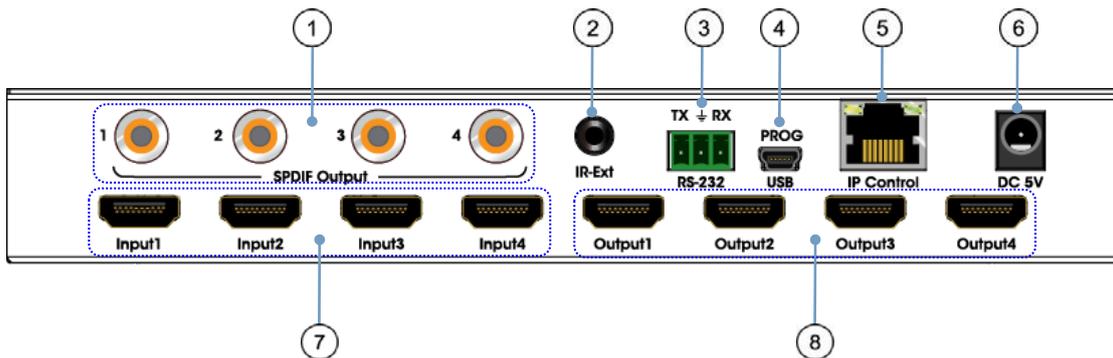|	
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Resolution	480p@60hz,576P@50hz,720P@60hz, 1080P@24hz,1080P@50hz,1080P@60hz,4K@24hz,4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4
Video Input Connectors	4xHDMI Type A, 19-pin, female
Video Output Connectors	4xHDMI Type A, 19-pin, female
RS-232 serial port	3PIN terminal block connectors
Ethernet port (IP control)	RJ45, female
IR Ext port	1x3.5mm stereo jack
Bandwidth	18 Gbps
Default IP	192.168.1.168
Rack-Mountable	Rack ears included
Dimensions(WxHxD)	L216XW105XH34mm
Net Weight	0.72kg
Power consumption	13W(Max)

4. Panel Descriptions

① IR receive window.

② Output button OUT1~4: choose the desired output port from input ports 1~4.

Note: 1) To Turn ON/OFF DHCP function: Press the selector buttons of output 1 and output 2 at the same time for 3 seconds.

2) To restore factory settings: With all outputs connected to input 1, press the selector buttons of output 3 and output 4 at the same time for 3 seconds.

① SPDIF Audio output.

② For IR external receiver cable.

③ RS232 for control or upgrading the firmware.

④ USB micro 5P port for upgrading the firmware.
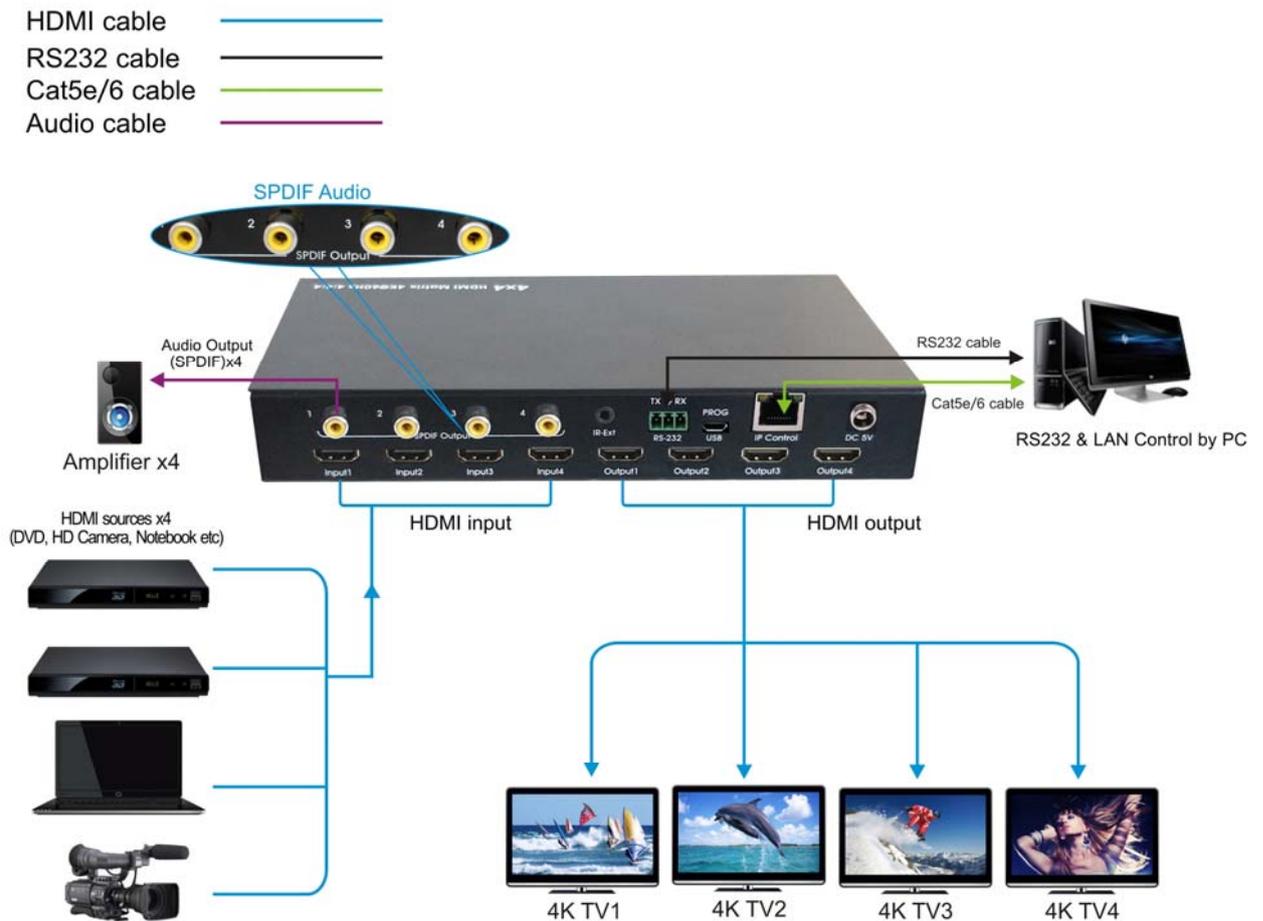
⑤ IP control.

⑥ DC power input.

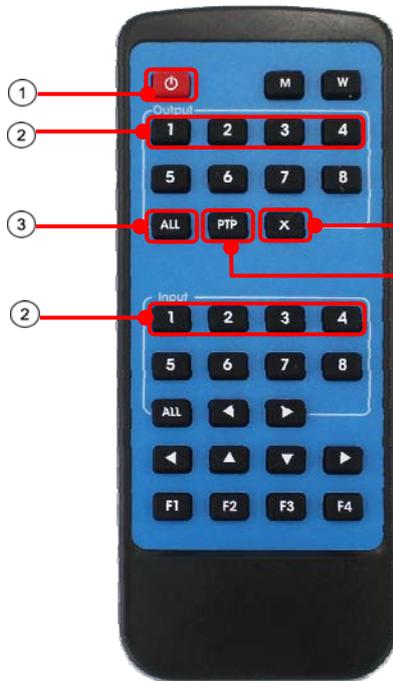⑦ HDMI input port.

⑧ HDMI output port.

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 5V 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 4 of outputs)

Press INPUT-Y (Y means 1 to 4 of inputs)

③ All outputs select INPUT-Y:

Press ALL button in zone OUTPUT

Press INPUT-Y button (Y means 1 to 4 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 Cable Pin Assignment

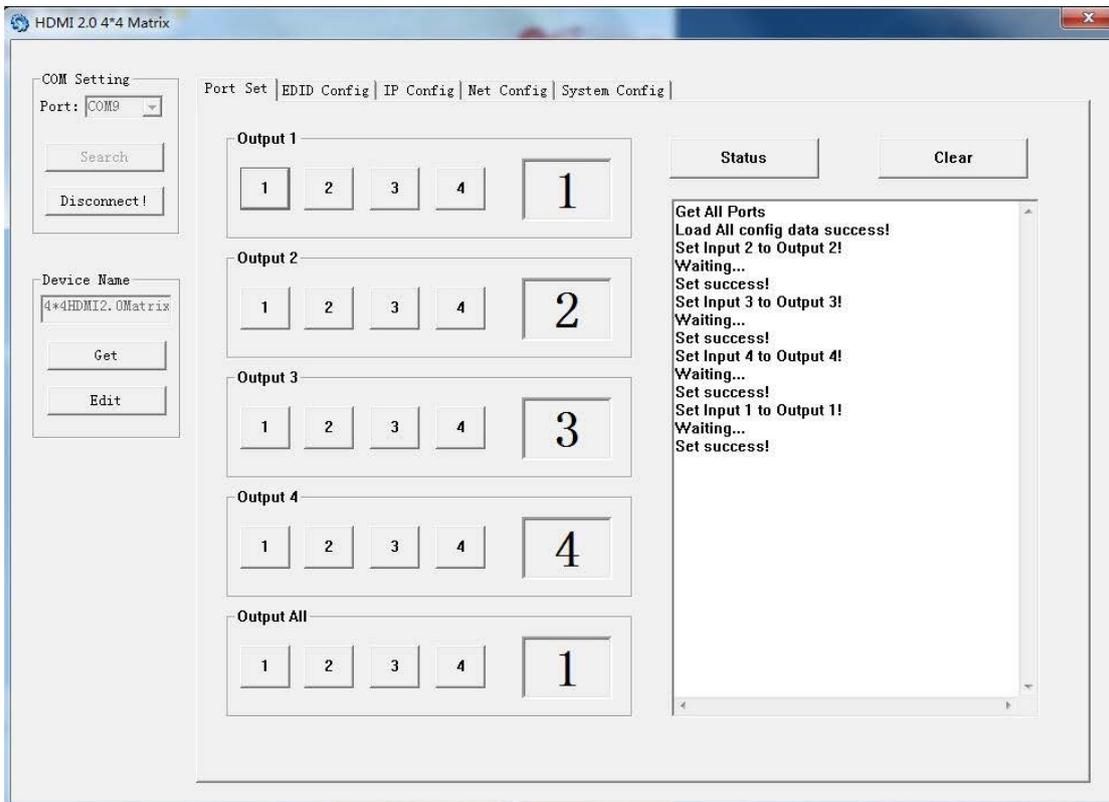| Matrix		Remote Control Console	
Assignment		PIN	Assignment
		1	NC
Tx		2	Rx
Rx		3	Tx
		4	NC
GND		5	GND
		6	NC
		7	NC
		8	NC
		9	NC

9. RS232 Control

9.1 Software control

Connect the 4x4 Matrix to PC with a RS232 cable (see pinout table on page 7), open the software "PC Tool" included with the download of this manual. On the COM Setting session, select the COM port according to your PC and click "Connect" to get connected.
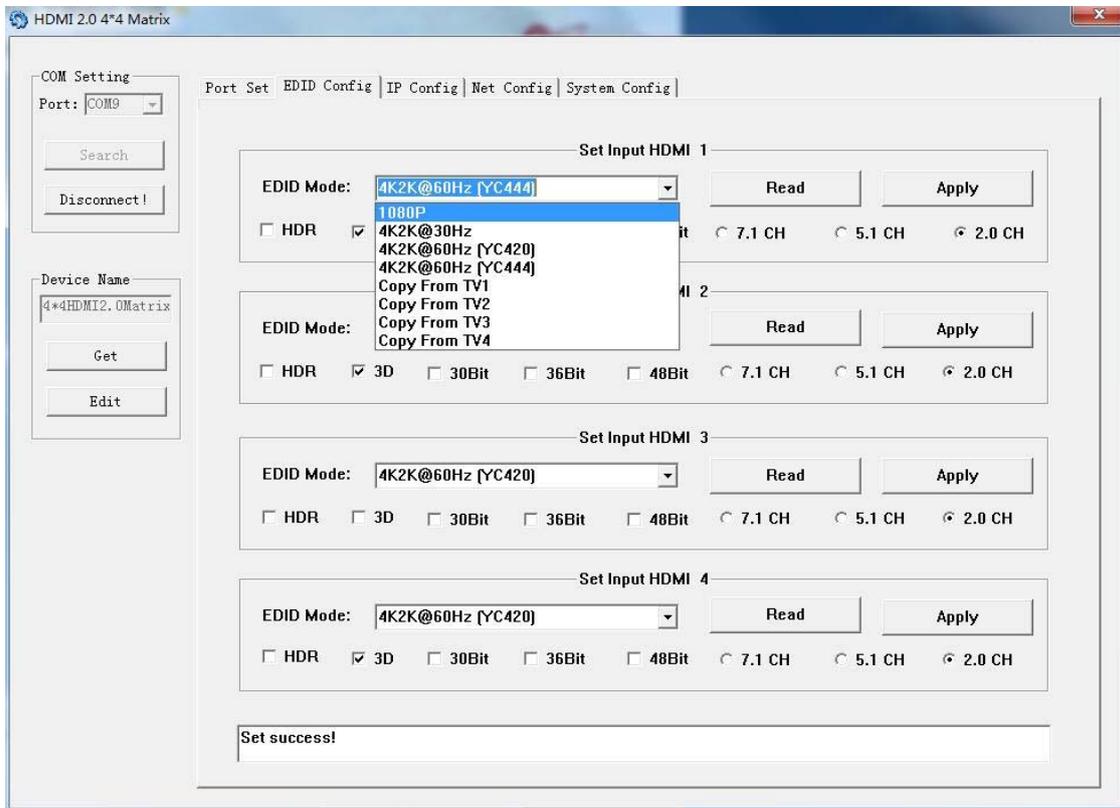
On this COM setting session, you can also change the Device name, Device name supports up to 16 characters. Save or edit your status by clicking the "Edit" button.

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.
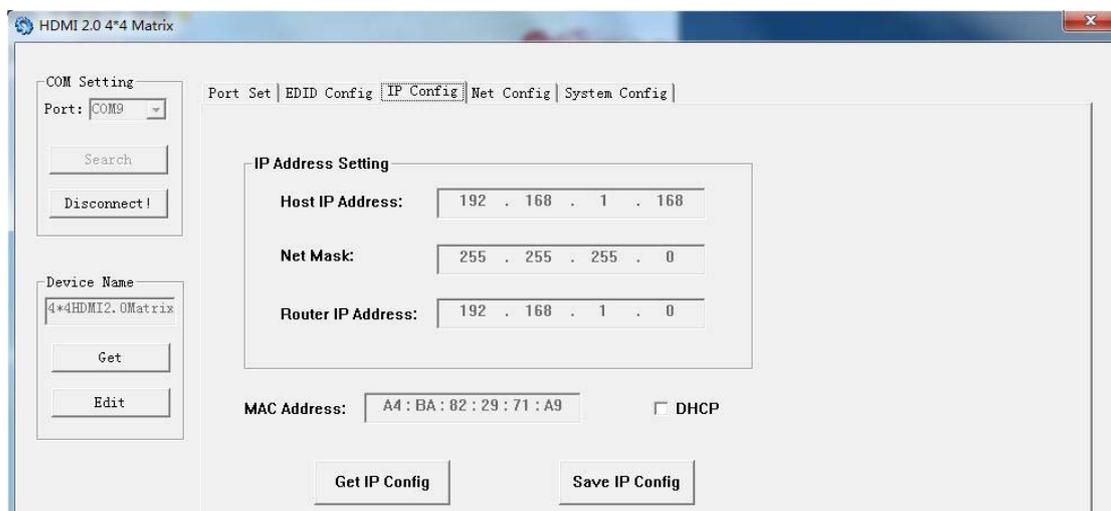

Picture 1: Porting Setting

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

Picture 2: EDID Setting

The IP configure session helps to read and configure the IP address and MAC of the Matrix. Click DHCP if you want the router to automatically assign an IP for the Matrix, then click "Save IP Config".   Otherwise, you can assign network settings manually here. After doing so, click "Save IP Config" to have them take effect.

Picture 3: IP Config

The Net Config section allows us to configure the PC and the Matrix (provided they are in the same LAN) with the IP Address and make a connection.

If you don't change the default settings, the Host (Matrix) IP address is 192.168.1.168.

If you wish to change the Network Settings, make the changes on the screen under "IP Config", and then click "Save IP Config" (see Picture 3).

If you want to have a DHCP server apply settings, click the box next to "DHCP", and then click "Save IP Config" (see Picture 3). Wait **at least** 5 minutes for the IP Address settings to update to what the DHCP server assigns. (The setting blocks will also gray out so that you cannot edit them.) Then enter the displayed IP address into your browser to open the control interface (Page 14, Picture 11).

Use the Discovery Feature to Identify the IP address assigned by the DHCP server
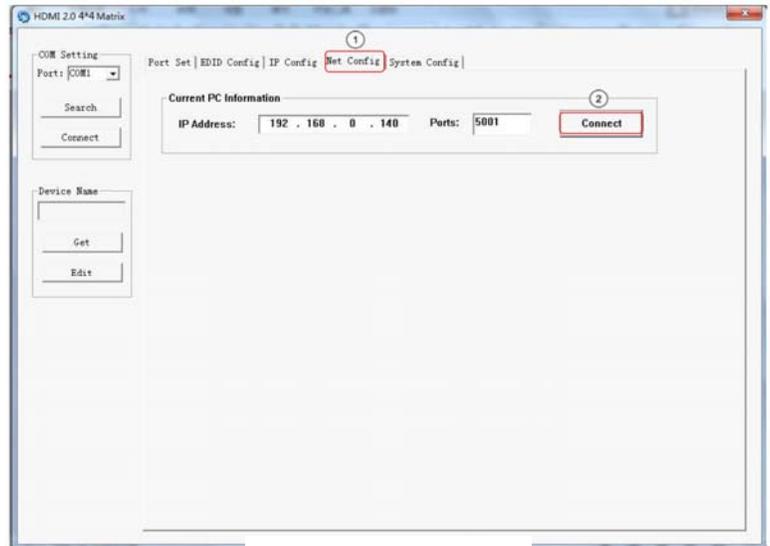
Note: This is only truly useful if you have multiple Matrix Switches connected to the LAN and need to know what IP address is assigned to each.

1. Under "Net Config" ("1" right), the address and port number of your PC connection should already be shown under "Current PC Information". Click "Connect" ("2" right) to the right of that information.
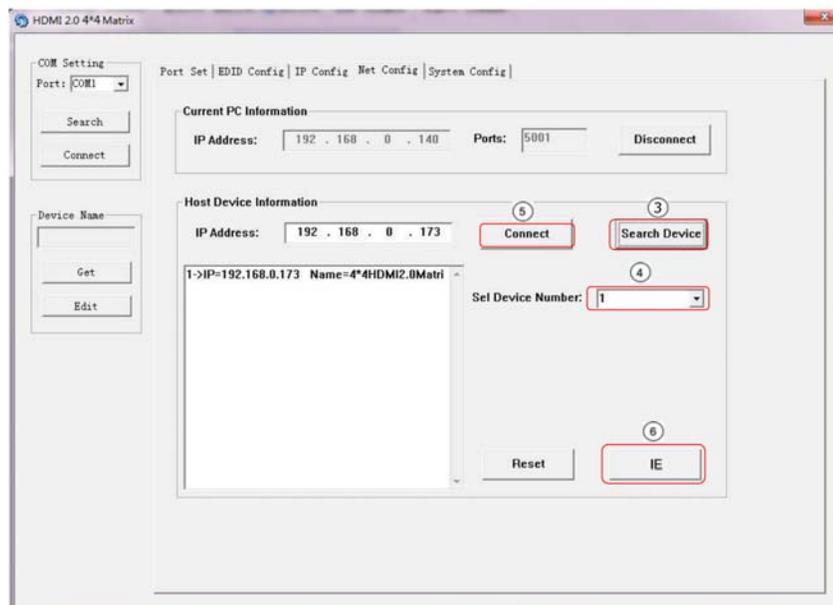
2. The Host Device Information section will be shown. Click "Search Device" ("3" below). The IP address and Matrix switch name for any Matrix Switches connected to your subnet will be displayed.

Picture 4: Net Config

3. If there are more than one connected to the subnet, make sure the Matrix you want to control is indicated under "Set Device Number" ("4" below), and click "Connect" ("5" below) next to the Host Device IP Address.

4. To open the web interface for the Switch to control it, either go to your browser and enter the IP address shown, or, click the "IE" button ("6" below) and the PC's default browser will open automatically to that IP address.
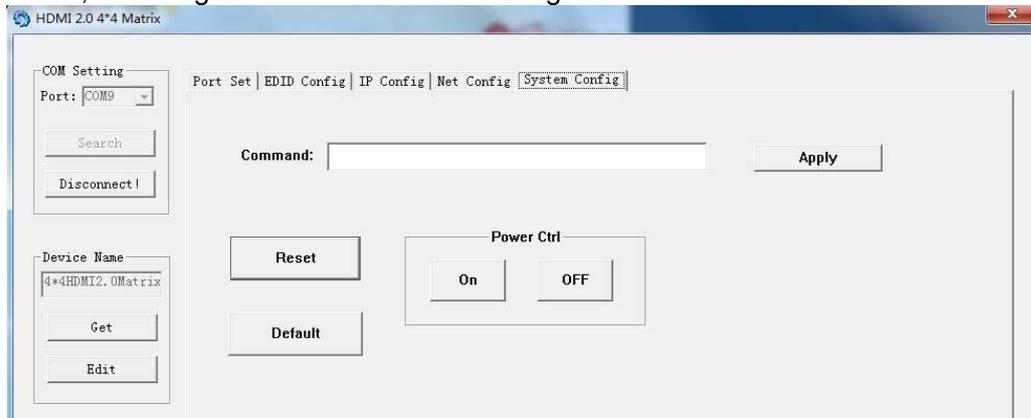
Picture 5: Net Config (Cont'd)

The last section is System Config, which allows the user to power ON/OFF or to Reset, resetting the Matrix to default settings.
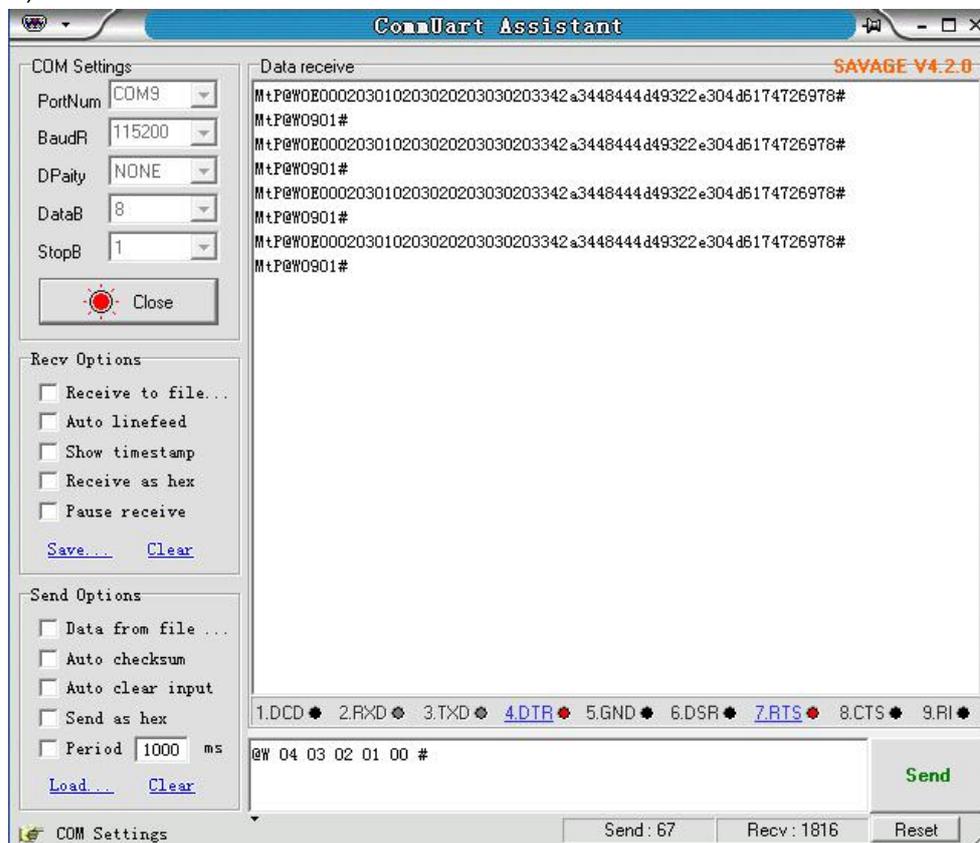

Picture 6: System config

9.2 RS232 Command Control 1). Open a terminal program. Use one that has a "Send" box for sending commands (i.e. Terminal.exe).

2). Connection port settings:

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

3). Enter Port Command in "Send" box.

Picture 7

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4). Command

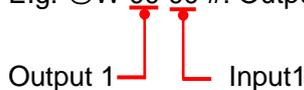| Command	Function	Note
@W 04 00 01 02 03 #	PTP Function	Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc)
@W 50 #	Reboot	
@W 51 #	Restore Factory Setting	
@W 0F 00 #	Standby	00: Standby Mode 01: Cancel "Standby Mode"

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 #: Output 1 display Input1

Output 1 � 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 below 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 the function, "0" : doesn't choose the function.

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

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

E.g: @W 05 03 C9 #

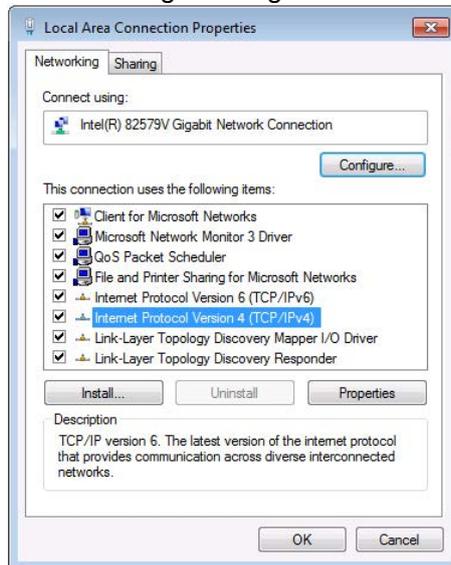The EDID of input 1 is: 4K2K_60(YC444)、HDR、48Bit、7.1CH、3D.

10. Web Control

10.1 Static IP Address.

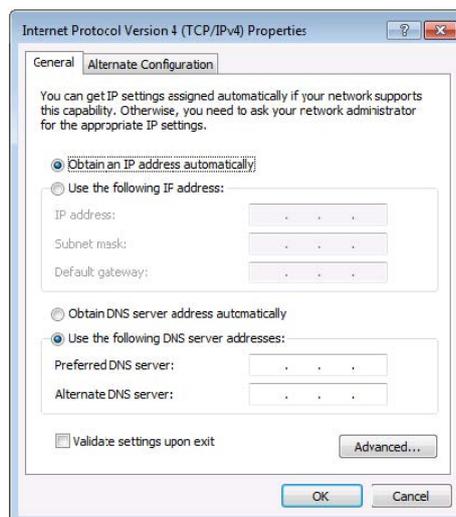The default IP Address of HDMI Matrix is 192.168.1.168.

10.1.1 Change the IP address of your PC.

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

2). Configure your PC as follows:

① Click **Start** > **Control Panel** > **Network and Sharing Center.**

② Click **Change Adapter Settings**.

③ Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.

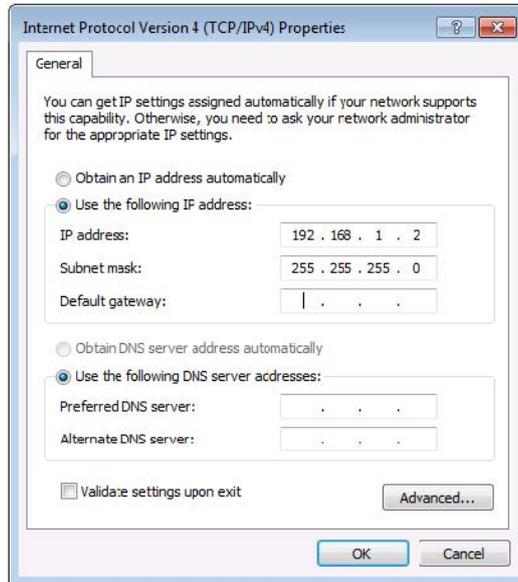3). Connect to the device and click change settings of this connection:

Picture 8

4). Highlight **Internet Protocol Version 4 (TCP/IPv4)** by clicking on the item.

5). Click **Properties**.

Picture 9

6). Select **Use the following IP Address** for static IP addressing and fill in the details.

For TCP/IPv4 you can use any IP address in the range 192.168.1.2 to 192.168.1.254 (excluding 192.168.1.168).
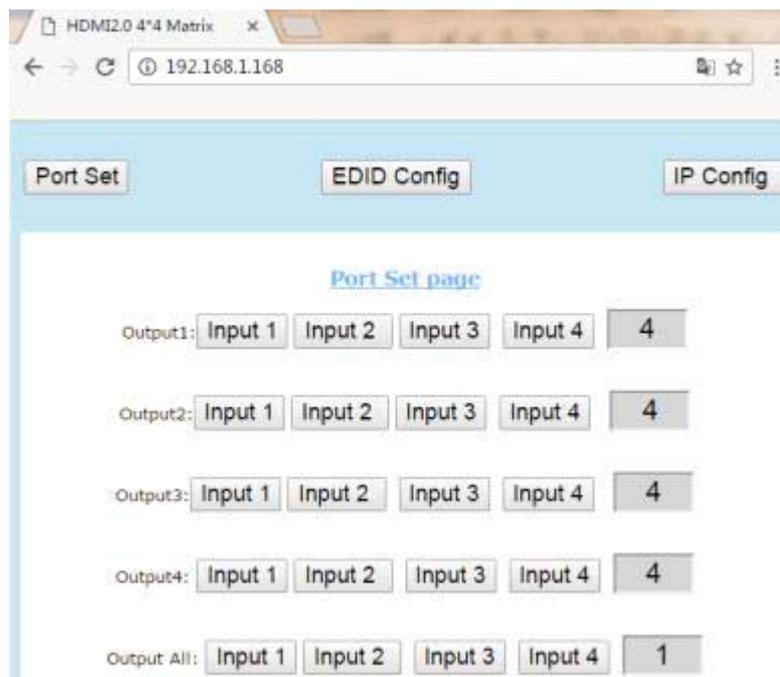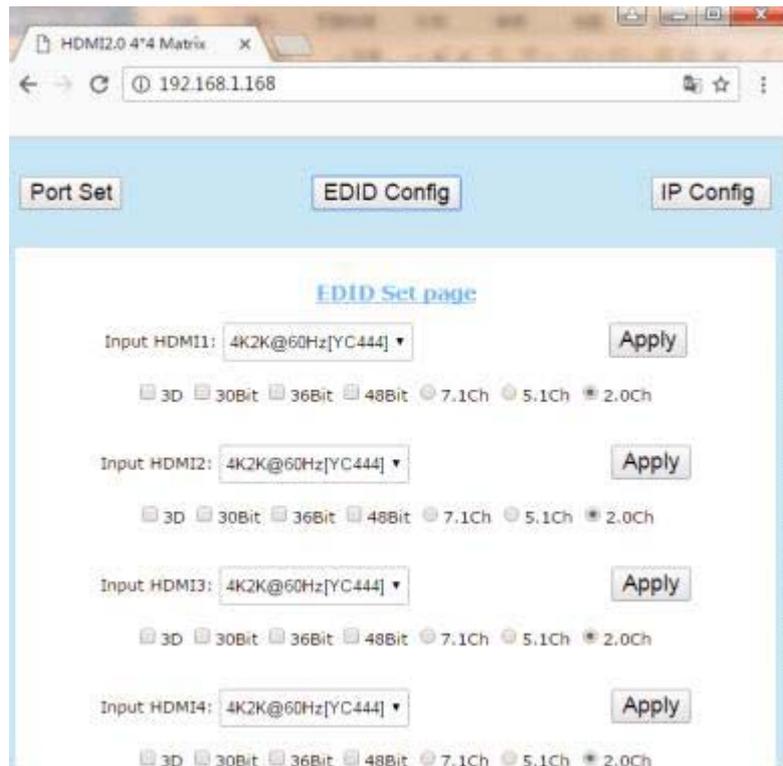

Picture 10

7). Click **OK**.

8). Click **Close**.

10.1.2 Open the web browser and control the matrix.

1). Open the Web browser and enter the IP address of the HDMI Matrix:192.168.1.168, then you can set the function as below pictures:
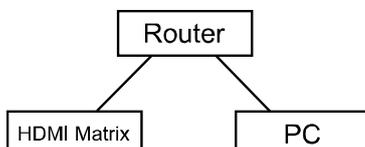

Picture 11: Port Setting Page

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Picture 12: EDID Setting Page

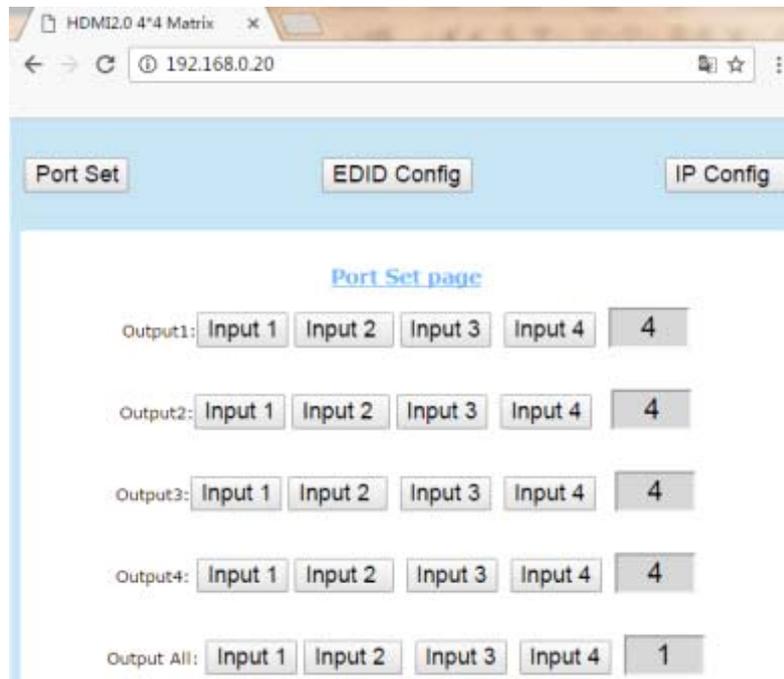Picture 13: IP Configuration Page

10.2 Using DHCP server

You can also choose "DHCP" for HDMI Matrix (refer to section 9.1 picture3)

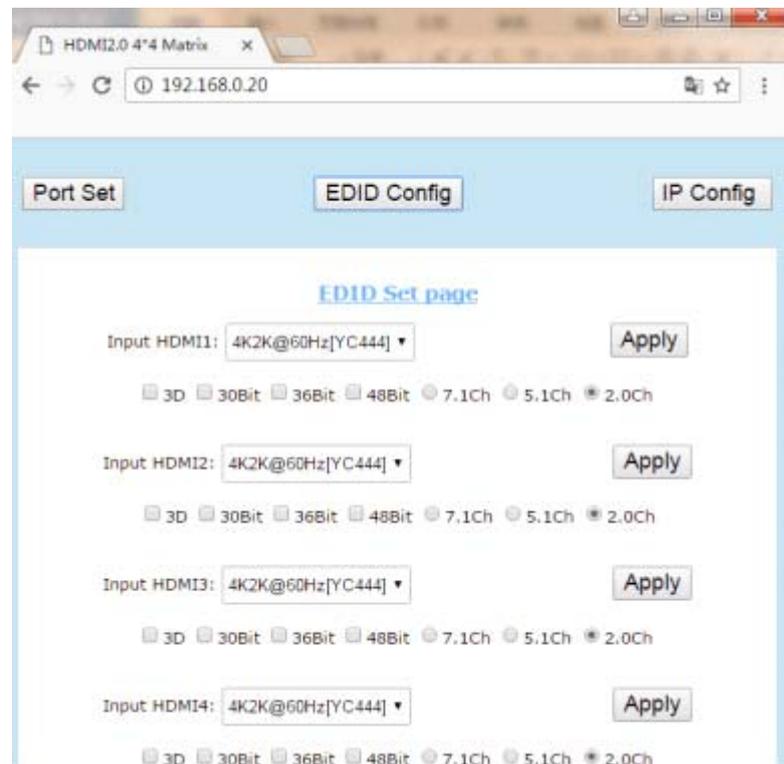1). Connect the HDMI Matrix and PC to the LAN.

2). Open the PC tool.

3). Search for the IP address of HDMI Matrix, (refer to page 10, section 9.1 pictures 4 & 5).
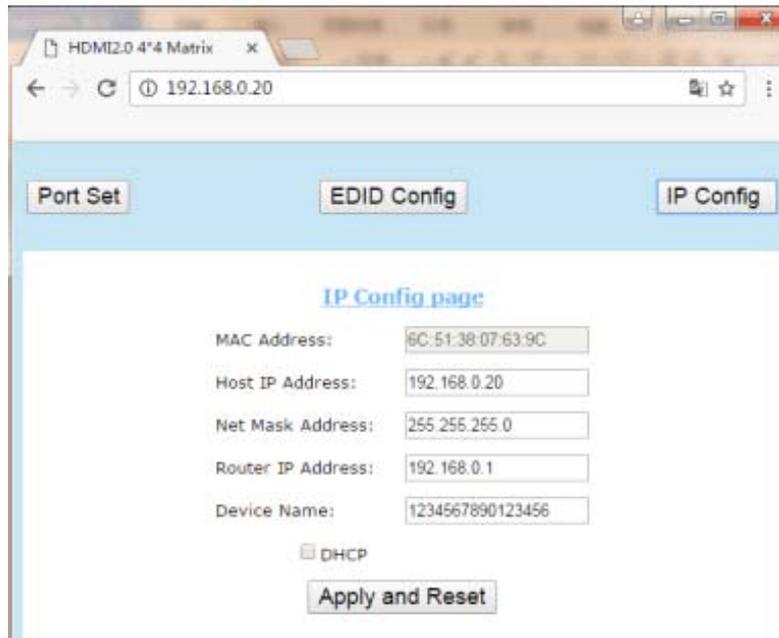
4). Open the web browser and enter the IP address you found in picture 5, then you can set the function as shown below:

Picture 14: Port Setting Page
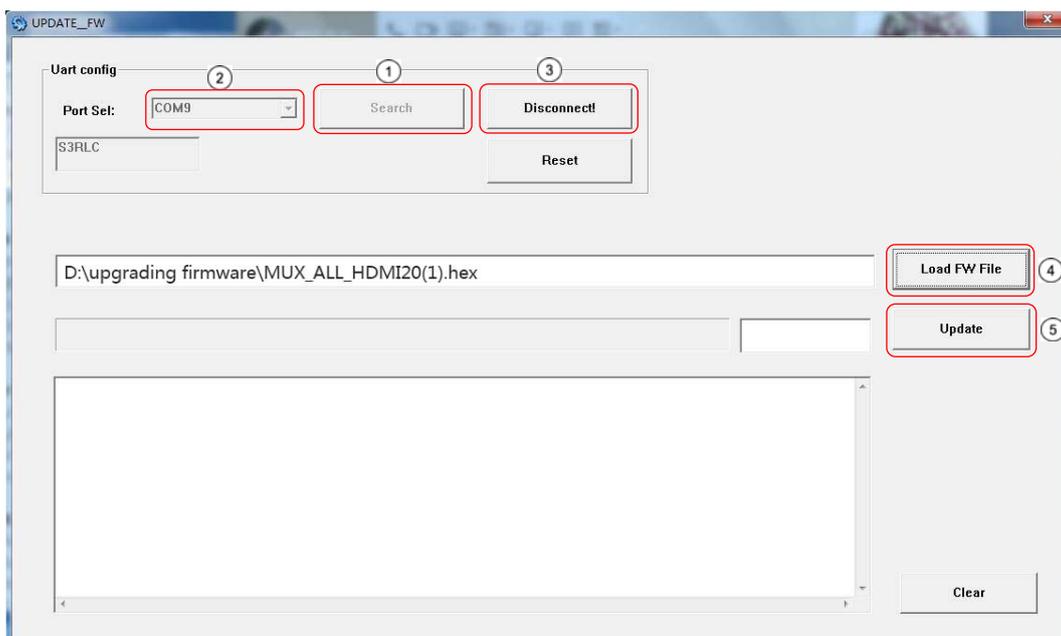

Picture 15: EDID Setting Page

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Picture 16: IP Configuration Page

11. Online upgrading firmware.

1). Connect the HDMI Matrix with PC via USB or RS232 port.

2). Open the software to upgrade firmware (no new software available at this time).

3). Click "Search" choose the port, then click "connect", then you can see "S3R(C)", click "Load FW File" to upload the firmware,click "update", the firmware can be upgraded in one minute.

Picture 17:Upgrading firmware

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MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine 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.