



J-TECH DIGITAL RS232 HDMI Matrix Switch User Manual

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J-TECH DIGITAL RS232 HDMI Matrix Switch



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:

1. Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
2. To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
3. Never spill liquid of any kind on or into this product.
4. 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.
5. Do not attach the power supply cabling to building surfaces.
6. Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
7. 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.
8. 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.

INTRODUCTION

This 8x8 4k HDMI Matrix supports the transmission of video (resolutions up to 4K2K@60Hz, HDCP 2.2, HDMI2.0) and multi-channel digital audio from 8 HDMI sources to 8 HDMI outputs and 8 SPDIF Output. This matrix supports high resolution digital audio formats such as Dolby TrueHD and DTS-HD Master Audio as well as 3D video content.

Controllable via Panel buttons, local IR, RS-232, IP or Web GUI. We can provide control drivers for all the major control systems. This unit also supports HDR10 to bring ultimate visual experience. It is designed to save end

users' time and energy for they are able to update the system by the creative micro USB interface. In addition, this matrix also allow additional options for integration of third-party control systems, we could provide control drivers for control systems such as Control 4.

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

PACKAGE CONTENTS

- 1x HDMI Matrix
- 1x 12V DC power supply
- 1x Remote control
- 1x IR Ext RX Cable
- 1x mounting kit
- 1x CD for control software & user manual

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

FEATURES

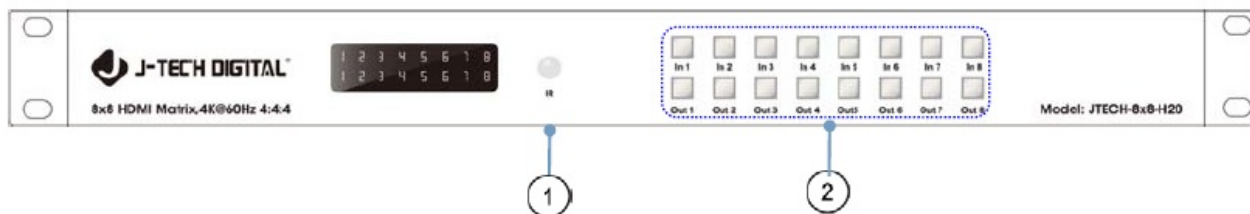
- HDMI 2.0 version (Support 4K@60Hz YUV4:4:4)
- Support 3D
- Bandwidth upto 18Gbps
- HDCP2.2 input ,HDCP2.2 output
- HDCP1.4 input, HDCP1.4 output
- Support HDR10
- 8xHDMI Input, 8xHDMI output with 8xSPDIF Audio
- Any one of the 8 Ultra HD sources to any one of the 8 Ultra HD displays
- Support Dolby True HD and DTS-HD master 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

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	1×3.5mm stereo jack
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	23W(Max)

OPERATION CONTROLS AND FUNCTIONS

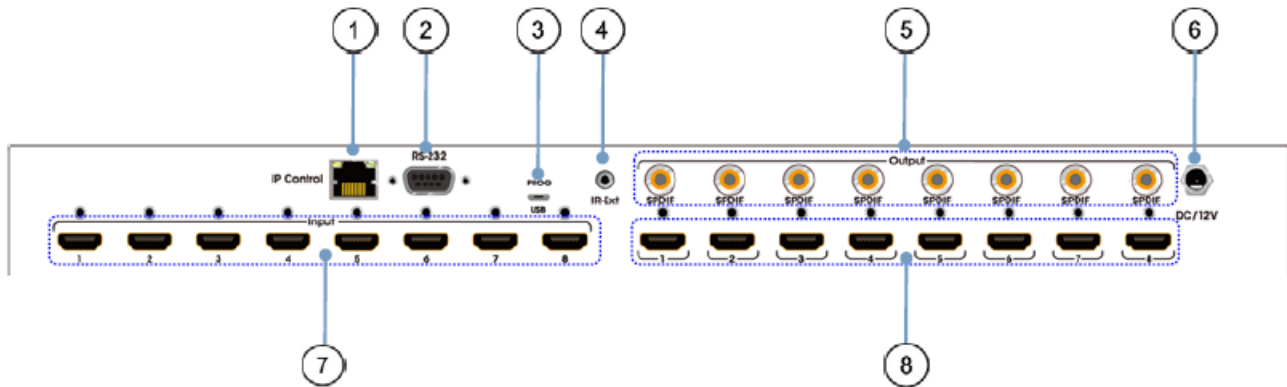
Front Panel



1. IR WINDOW: Accepts IR signals from the included IR remote for control of this unit only.
2. 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). And also could press and hold Input & Output buttons for 3 second to set up below functions:
 1. Locking & Unlocking: Press and hold the Input8 for 3 seconds to lock all button functions on the front panel. Press and hold Input8 for 3 seconds again to release the lock function.
 2. Checking & Setting IP Address / DHCP: Press and hold the Input7 for 3 seconds to enter into the mode of checking IP address and DHCP. Press and hold Input5 for 3 seconds to Exit. Press below buttons shortly to revise the IP address and DHCP accordingly.
 1. Press Input1 button to let cursor move LEFT
 2. Press Input2 and/or Output2 button to revise the data
 3. Press Input3 button to let cursor move RIGHT
 4. Press Output1 button to confirm revising

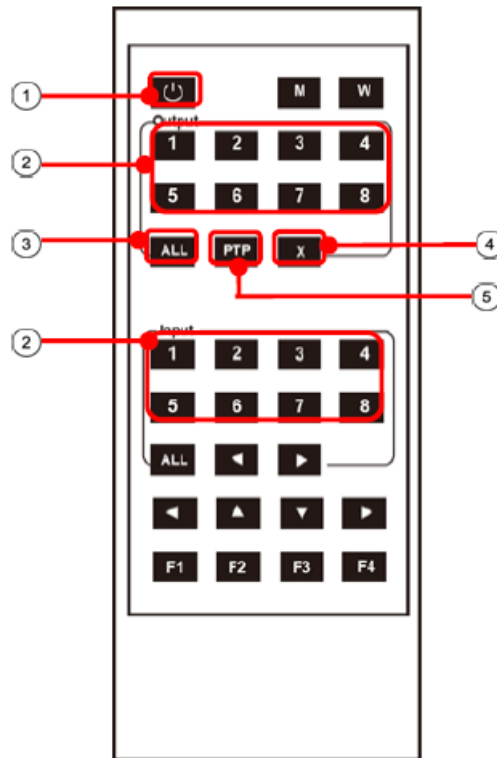
3. Checking & Setting EDID: Press and hold the Input6 for 3 seconds to enter into the mode of checking EDID. Press and hold Input5 for 3 seconds to Exit. Press below buttons shortly to revise the EDID accordingly.
 1. Press Input2 and/or Output2 button to revise the data
 2. Press Output1 button to confirm revising

Rear Panel



1. IP CONTROL: Connect directly, or through a network switch, to your PC or laptop to control the unit via telnet/Web GUI.
2. RS232: Connect directly to a PC, laptop or other serial control device to send RS-232 commands to control the unit
3. MICRO USB: This slot is reserved for firmware update use only
4. 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.
5. SPDIF Audio Output: Audio output is from the selected HDMI source
6. DC POWER: Plug the 12V DC power adapter into the unit and connect it to an AC wall outlet for power.
7. 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.
8. OUTPUT 1~8: Connect to HDMI TVs, monitors or amplifiers for digital video and audio output.

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

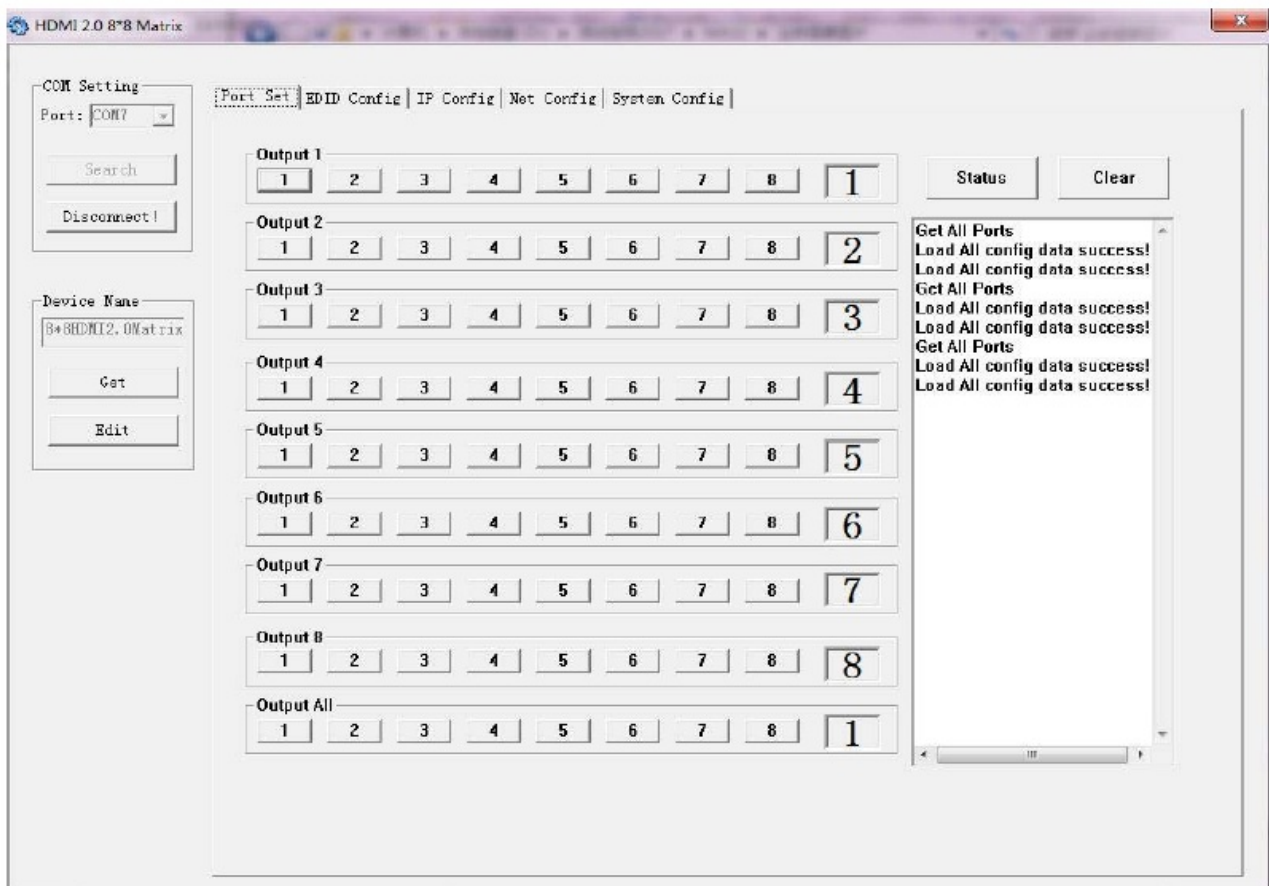
RS232 Pin Assignment

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

RS232 Control

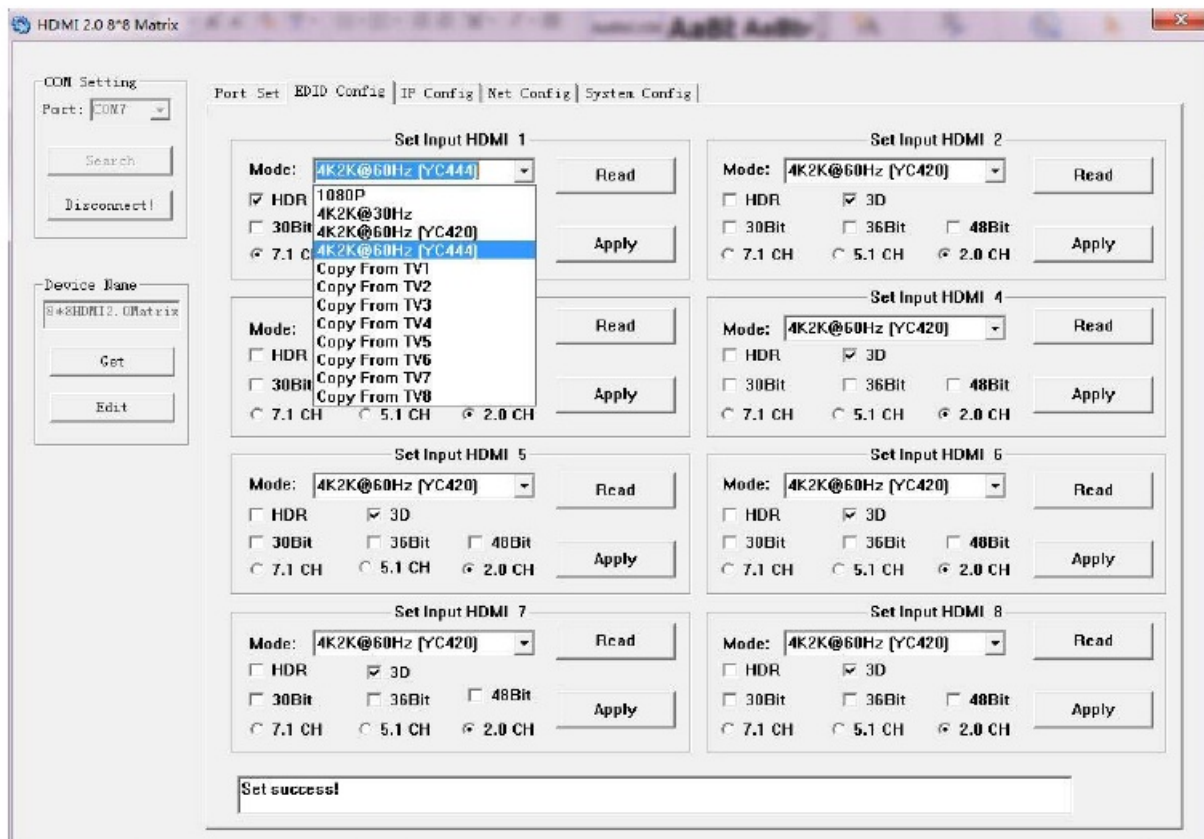
Software control

- Connect the 8×8 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.



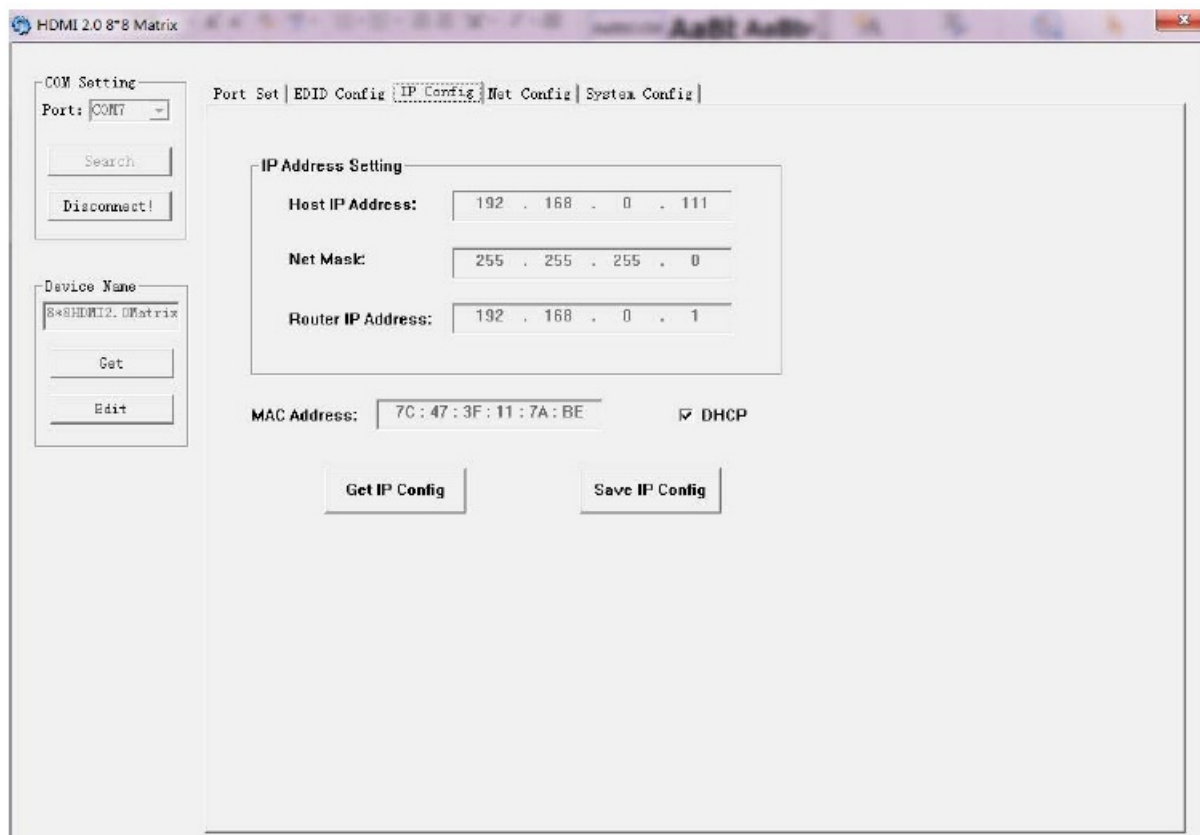
Picture 1

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



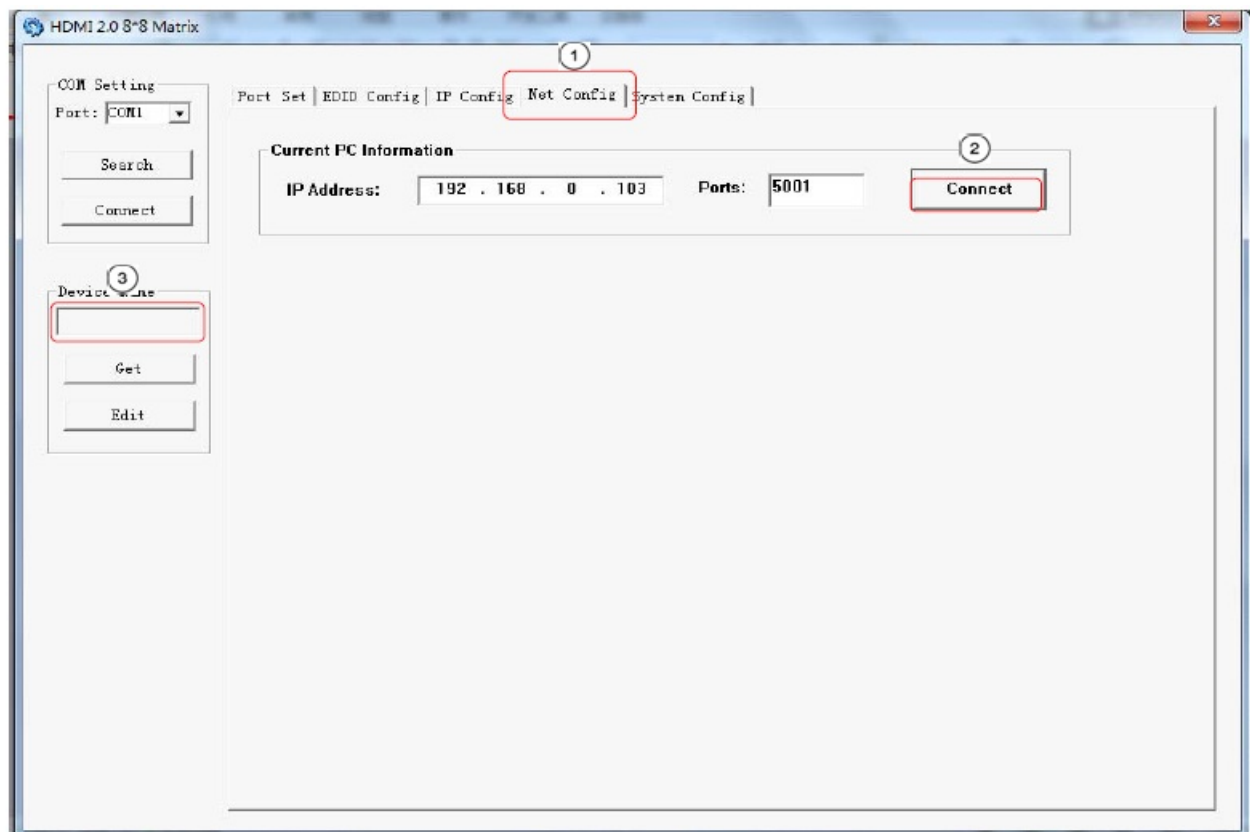
Picture 2

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



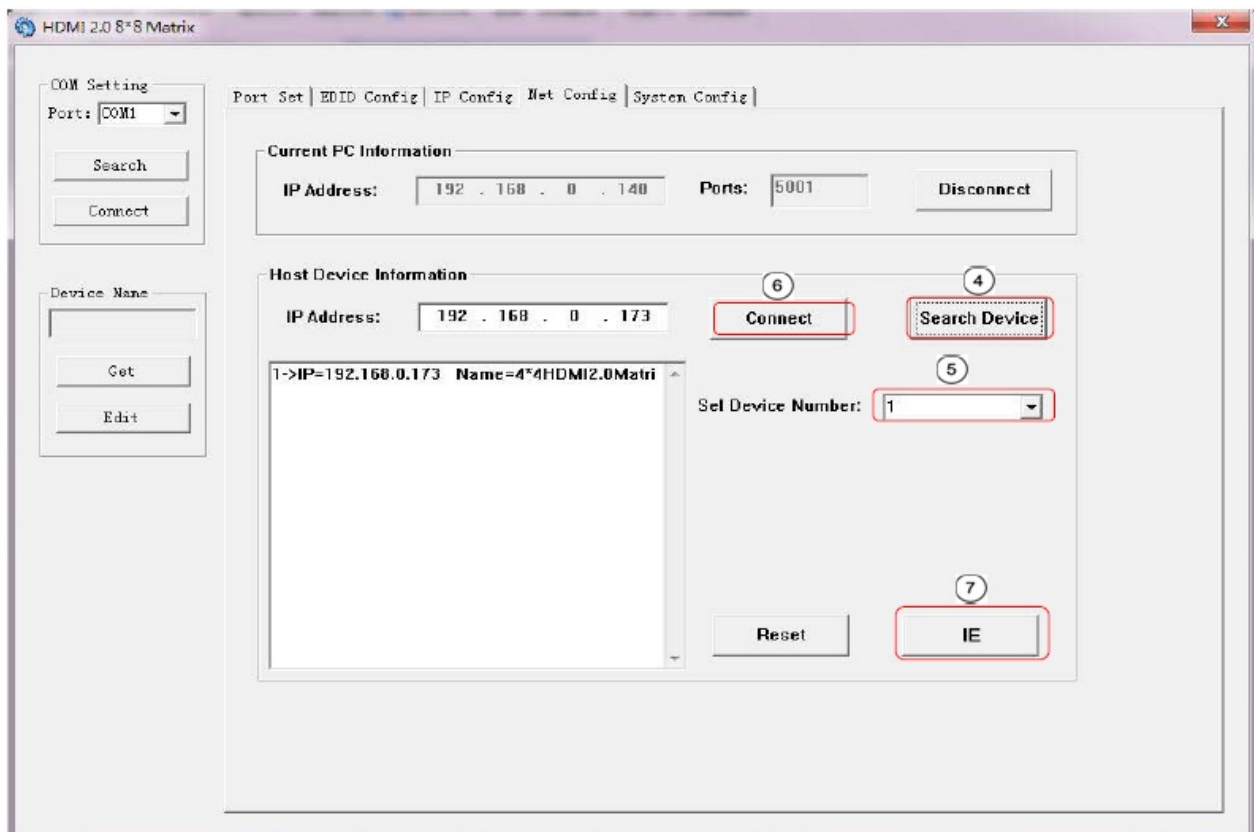
Picture 3

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



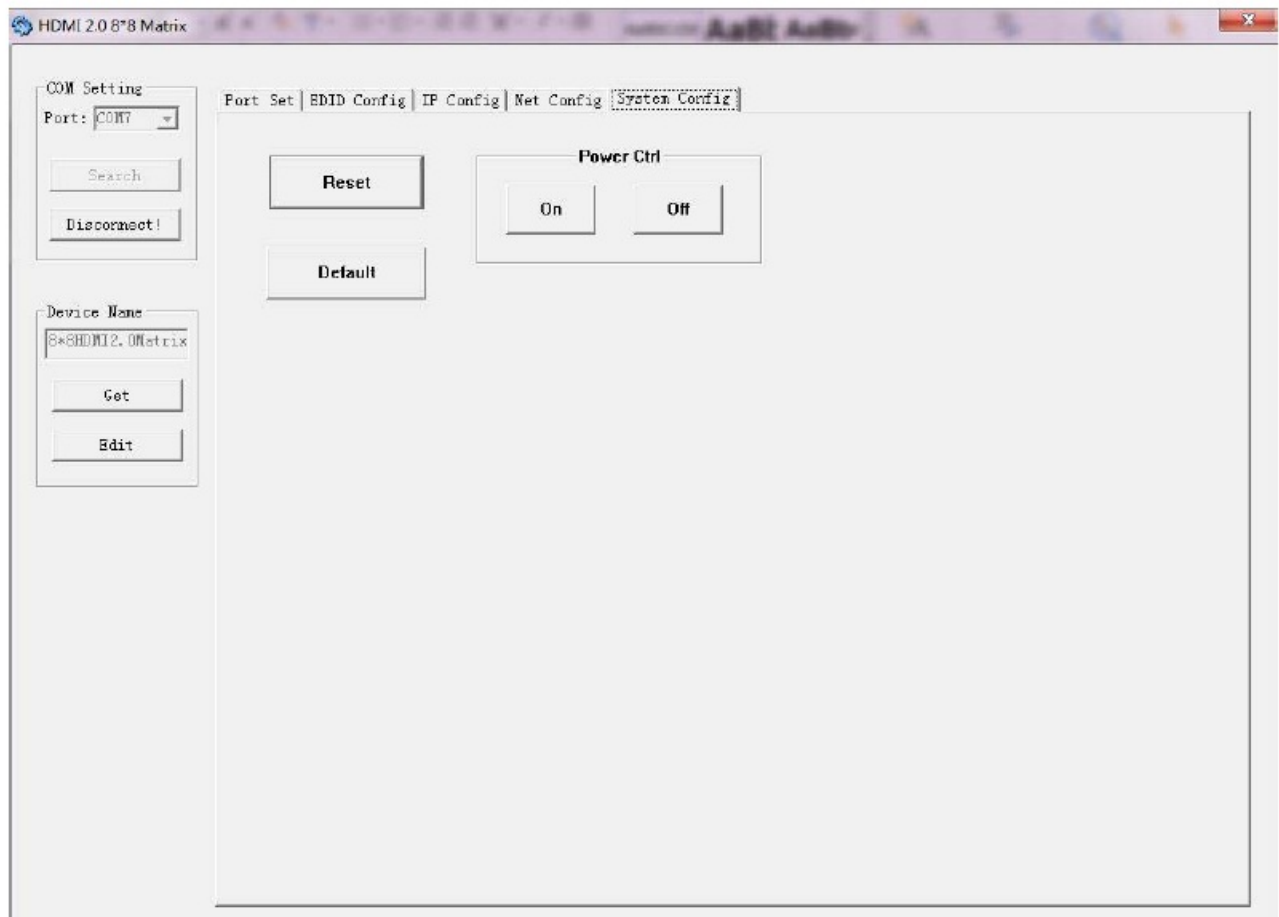
Picture 4

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



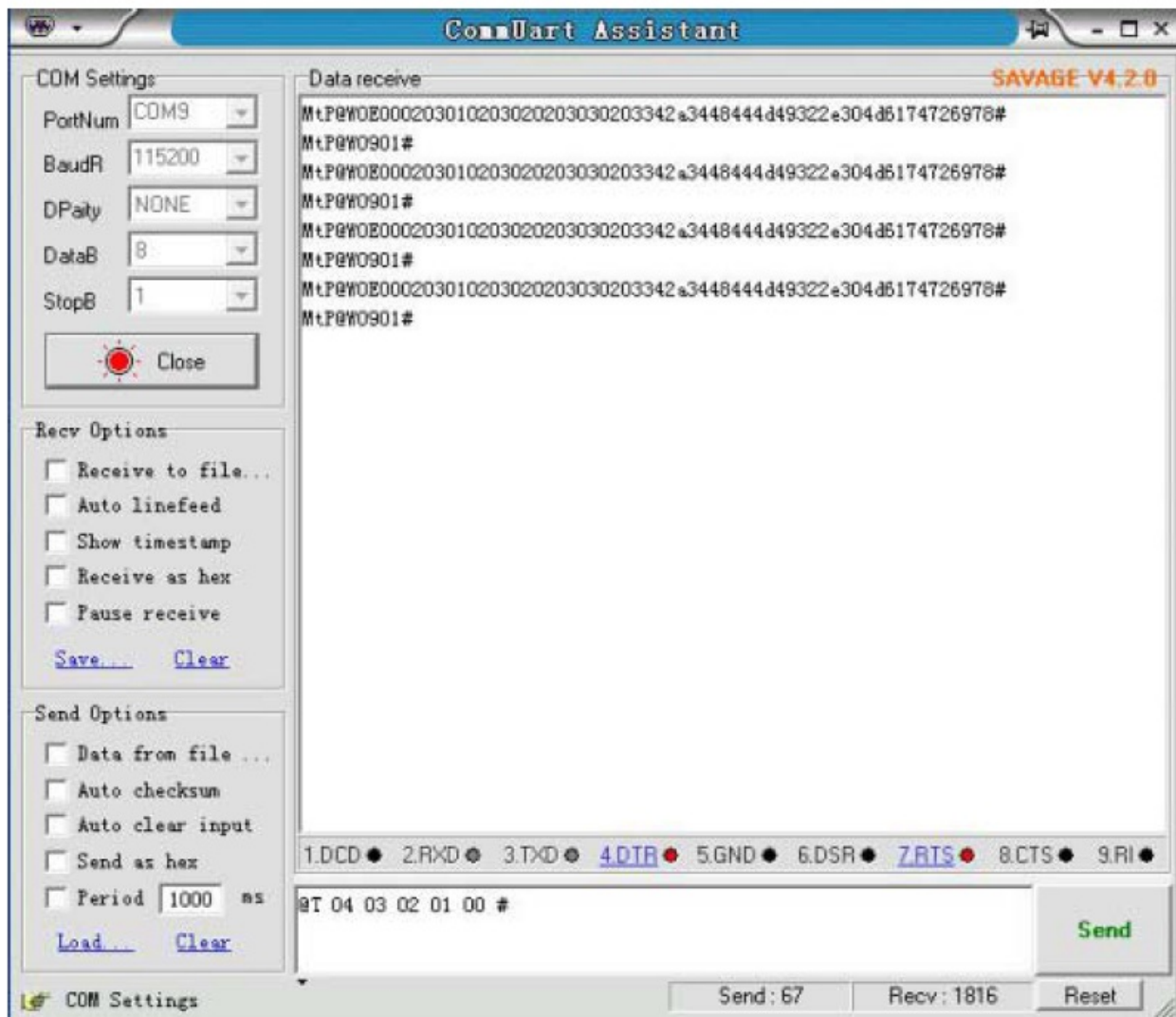
Picture 6

Command Control

1. Open CommUart Assistant.
2. Comport setting:

Baud Rate:	115200 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit
TCP/UDP Port:	5000

3. Enter Port Command in Send options




4. Command

Command	Function	Note
@T 04 00 01 02 03 ..	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 Set ting	
@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
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)

BB for selecting blowing 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

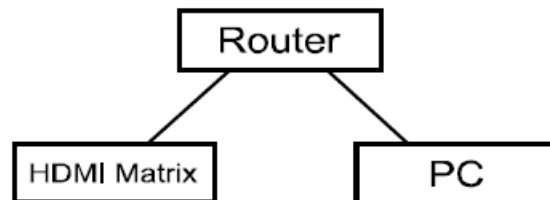
“1” : select the function, “0” : not select the function. E.g: 11001001: HDR, 48Bit, 7.1CH, 3D

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.

Web Control

1. Connect the HDMI Matrix and PC to the LAN under the Matrix DHCPMode



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



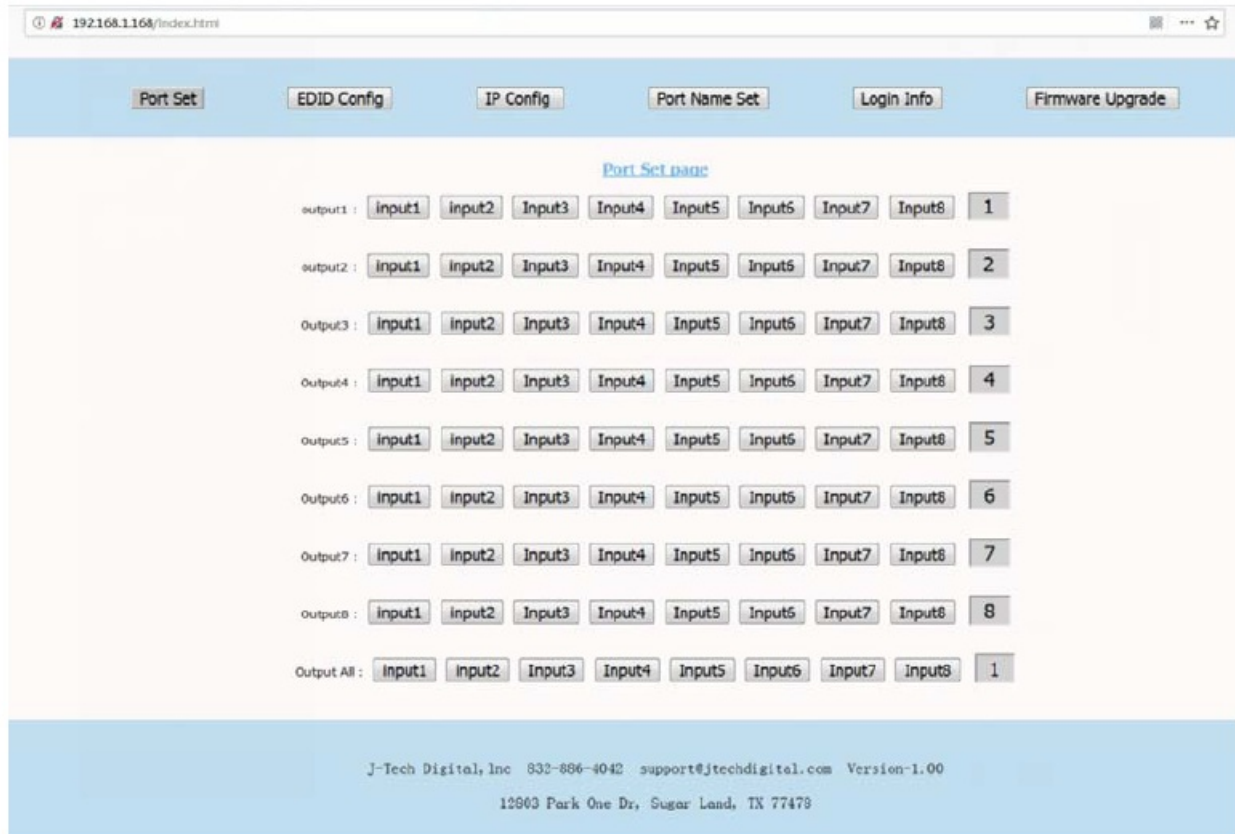
3. Search the IP address of HDMI Matrix, please refer to picture 4 & picture 5.
4. Open the web browser and enter the IP address you searched, then you can set the function as below pictures



Picture 8: Login Page

Default User name: Admin

Default Password: Admin



Picture 9: Port Setting Page

192.168.1.168/index.html

Port Set EDID Config IP Config Port Name Set Login Info Firmware Upgrade

[EDID Set page](#)

Input HDMI1: Copy From TV1 Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI2: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI3: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI4: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI5: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI6: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI7: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Input HDMI8: 4K2K@60Hz[YC420] Apply

☐ HDR ☒ 3D ☐ 30Bit ☐ 36Bit ☐ 48Bit ☐ 7.1Ch ☐ 5.1Ch ☒ 2.0Ch

Picture 10: EDID Setting Page

192.168.1.168/index.html

Port Set EDID Config IP Config Port Name Set Login Info Firmware Upgrade

[IP Config page](#)

MAC Address: 0C:A6:9E:9B:7C:6C

Host IP Address: 192.168.1.108

Net Mask Address: 255.255.255.0

Router IP Address: 192.168.1.1

Device Name: 8*BHD012.0Matrix

☐ DHCP

Apply

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12803 Park One Dr, Sugar Land, TX 77478

Picture 11: IP Configuration Page

192.168.1.168/index.html

Port Set EDID Config IP Config Port Name Set Login Info Firmware Upgrade

[Port Name Set](#)

Input1:	input1	OK	Cancel	Output1:	output1	OK	Cancel
Input2:	input2	OK	Cancel	Output2:	output2	OK	Cancel
Input3:	input3	OK	Cancel	Output3:	output3	OK	Cancel
Input4:	input4	OK	Cancel	Output4:	output4	OK	Cancel
Input5:	input5	OK	Cancel	Output5:	output5	OK	Cancel
Input6:	input6	OK	Cancel	Output6:	output6	OK	Cancel
Input7:	input7	OK	Cancel	Output7:	output7	OK	Cancel
Input8:	input8	OK	Cancel	Output8:	output8	OK	Cancel

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Picture 12: Port Name Setting Page

192.168.1.168/index.html

Port Set EDID Config IP Config Port Name Set Login Info Firmware Upgrade

[Login Info](#)

Current user id:

Current password:

New user id:

New password:

Modify

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Picture 13: Login info setting Page

192.168.1.168/index.html

Port Set EDID Config IP Config Port Name Set Login Info Firmware Upgrade

[Firmware Upgrade](#)

File Choose a file

BROWSE...

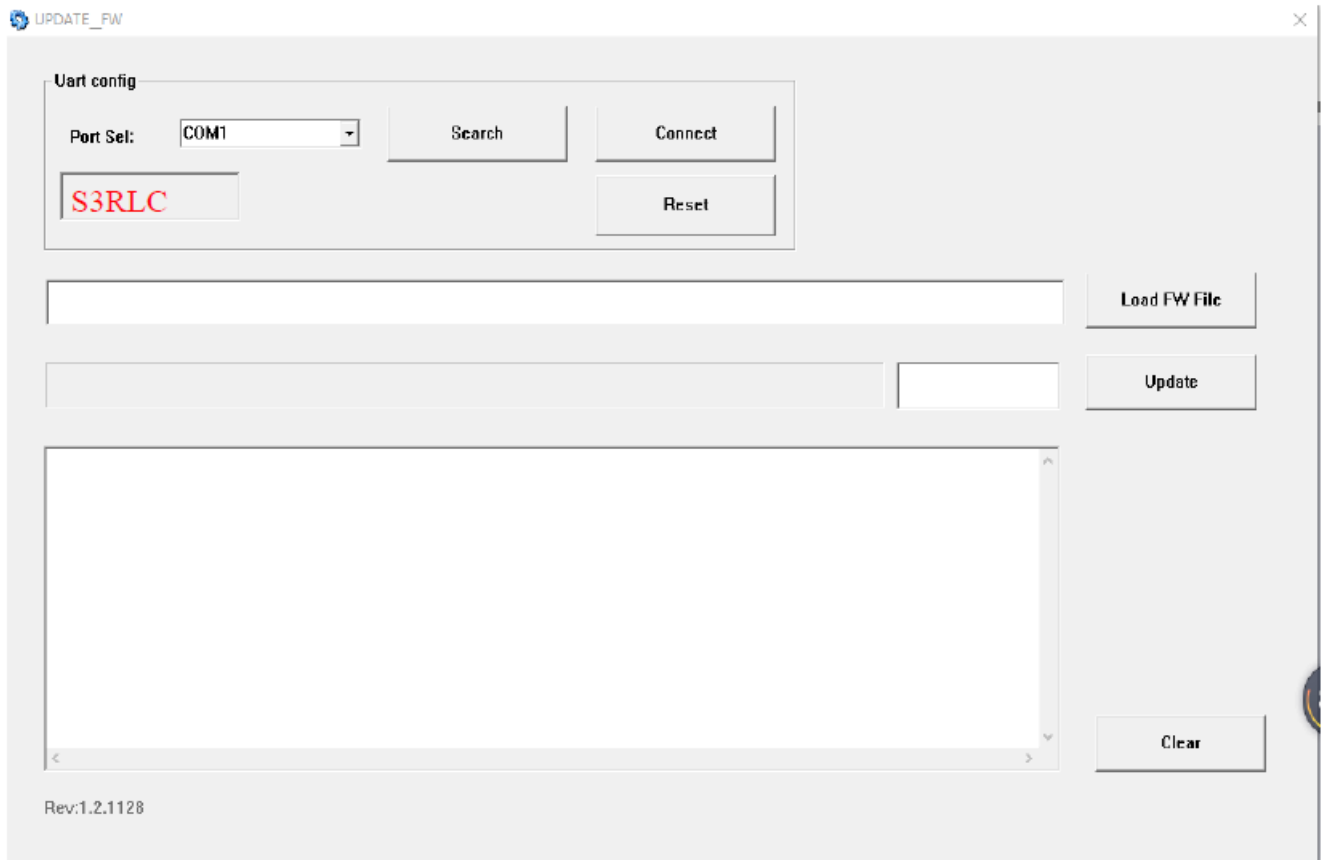
START UPGRADE

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Picture 14: Firmware Upgrade Page

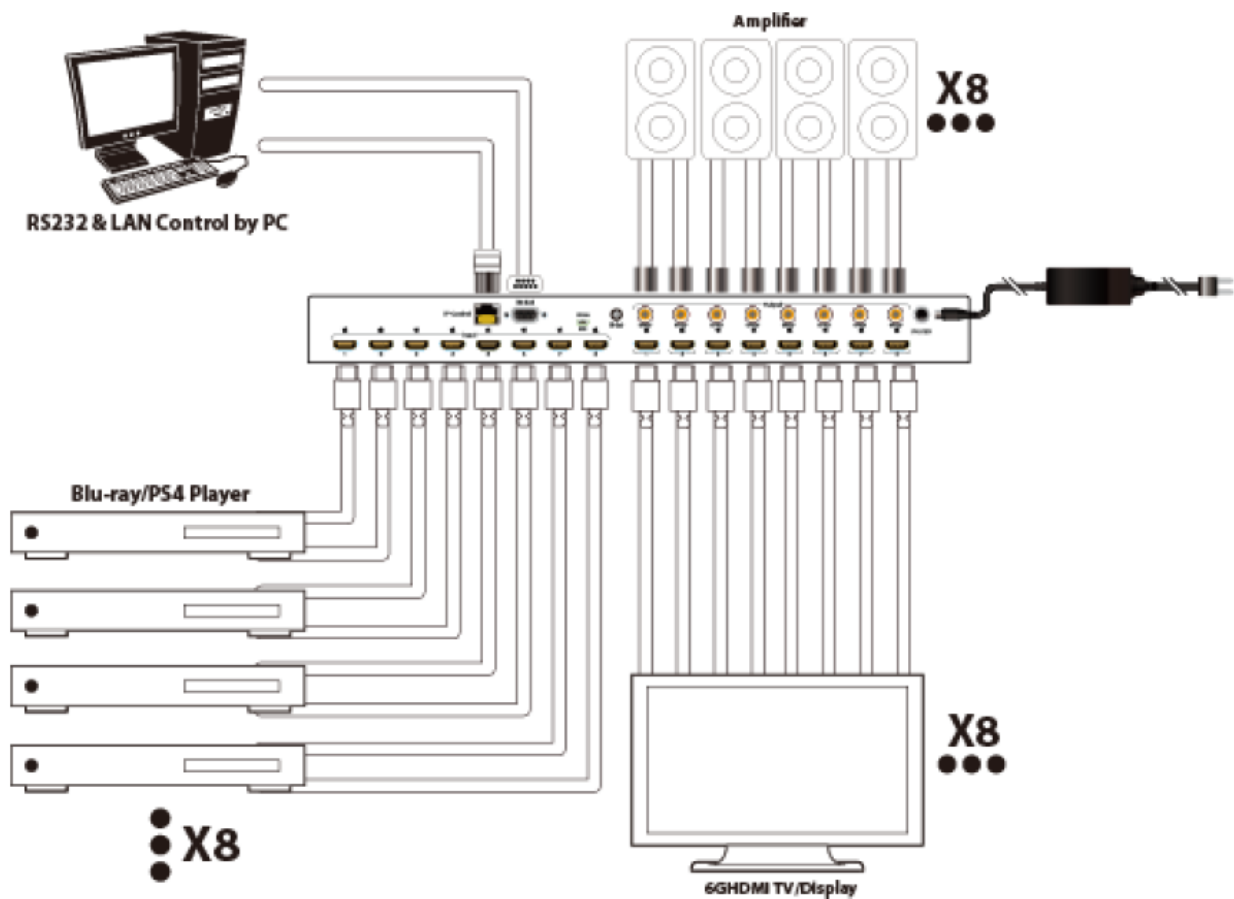
Micro USB to update firmware

Connect 8×8 HDMI Matrix to PC or laptop with Micro USB cable after matrix is powered on. Open the “updated software” which has been downloaded in our CD. And then click “ Search” → “ Port Sel” (to choose correct port) → “Connect” (It will show “S3RLC” when connect successfully) → “Load FW File” → “Update” Please do not power off or disconnect when it is updating the FW file.



Picture 15: software updated

CONNECTION DIAGRAM



SCAN HERE



Scan this QR code using your smartphone to view the full J-Tech Digital Product Lineup!



Have more questions? Scan this QR code using your smartphone to contact us!



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References

- **[B J-Tech Digital ® Official Site | Professional AV Solution Provider](#)**
- [User Manual](#)