70m 8x8 HDBaseT Matrix

Support POC, IP Control, RS232 Control

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

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

- Incorporate HDBaseT technology
- Any one of the 8 HDMI Sources to any one of the 8 HDMI Displays
- Each of the 8 outputs includes one HDMI output and one UTP output simultaneously
- HDMI 1.4 version (Support HDMI1.4 4K@60Hz YUV4:2:0).
- Transmit up to 70m under 1080p,40m under 4K@60Hz.
- HDCP 2.2/1.4 compliant.
- With wide-band Bi-Direction IR routed control(38~56KHz)
- Support RS232 pass through
- Support 8x Analog Audio and 8x SPDIF Audio embedded, Support 8x Analog Audio and 8x SPDIF Audio extraction.
- Support Panel Button, IR Routing, RS232 Control, IP Control
- Support POC (Receiver powered by HDBaseT Matrix).
- 2U rack design with mounting ears

2. Package Contents

1). 1x Main Unit (HDBaseT Matrix)
2). 1x Power Cable (AC100-240V)
3). 1x Remote control
4). 1xIR Extension cable, 10x Wide-Band "IR in " Cables, 9x "IR out" Cables
5). 1x mounting kit
6). 1x CD for control software & user manual

3. Specifications

Operating Temperature Range	-5 to +40°C(23 to +104 °F)
Storage Temperature Range	-10 to +60°C(-14 to +140 °F)
Operating Humidity Range	5 to 90 % RH (no condensation)
Input Video Signal	0.5-1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Signaling Rate	10.2Gbit/s
Video Format Supported	4K@60Hz,YUV420 4k@30Hz/1080P/1080i/720P/576P/480P/576i/480i
HDCP Compliant	HDCP2.2 and HDCP1.4
Output Video	HDMI2.0 and HDMI 1.4 (over HDBaseT)
Audio Format Supported	PCM, Dolby5.1/7.1, DTS5.1/7.1 digital audio
Maximum Transmission Distance	1080P 70m, 4K 40m
Power Consumption	48wtts (Max.)
Dimensions	L482.6 x W397.2 x H88 mm
Mass (Main Unit)	7.5KG

4. Panel Descriptions
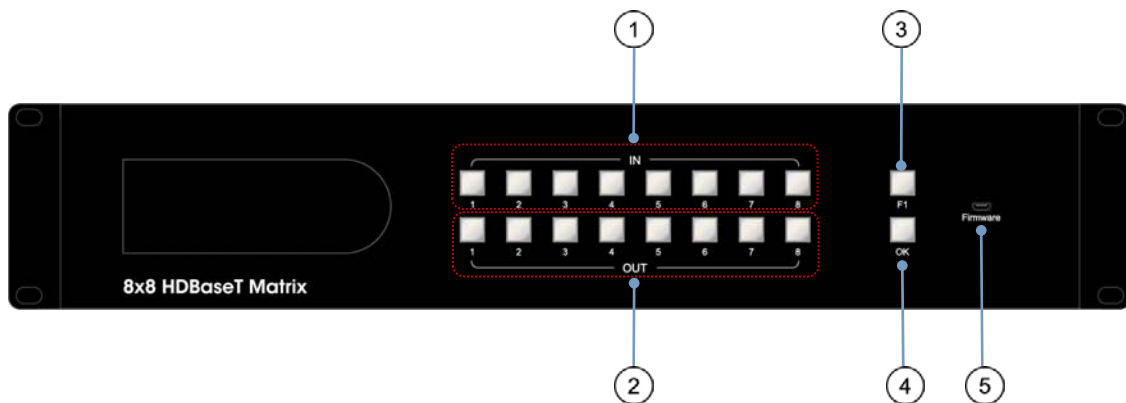
① Input button IN1~8: choose the desired input port from ports 1~8 in video mode.

② Output button OUT1~8: choose the desired output port from ports 1~8 in video mode.

③ F1 button: Function button (please refer to 4.1).

④ OK button: Confirm or Clear

⑤ USB Port for Firmware upgrade.
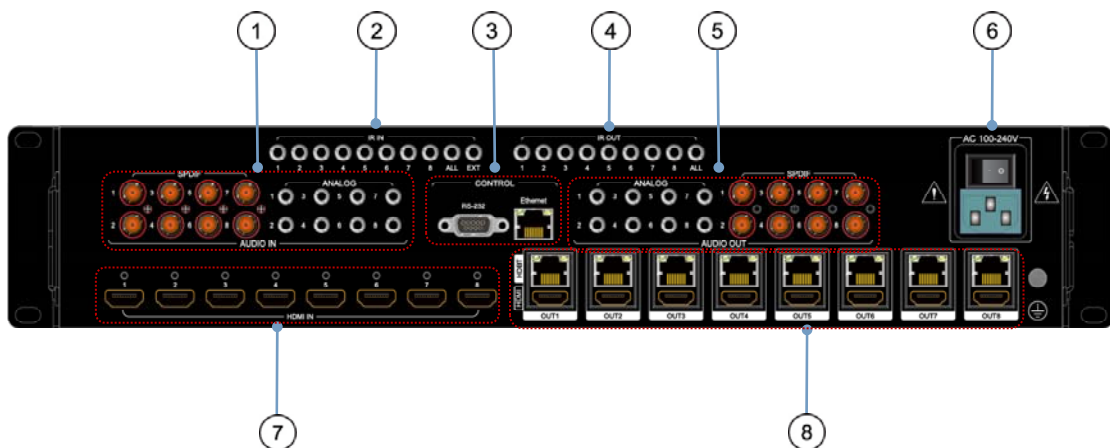
① Audio IN port (SPDIF & ANALOG)

② IR IN port.

③ RS232 & Ethernet for control.

④ IR OUT port.

⑤ Audio OUT port (SPDIF & ANALOG)

⑥ Power ON/OFF

⑦ HDMI Input ports (1~8).

⑧ HDMI/HDBT Output ports (1~8).

4.1 Input / output channel key operation

Channel	Button method
Any Key	The first operation of the button can wake up the screen
Input8	In EDID mode, long press means select all the channels
Output8	In Video mode, long press means select all the output channels
F1	Long press: enter the function selection mode short press: check the status of mode
OK	Short press: confirm Long press: clear the number selection key
F1+OK	**Lock the panel operation , press again to unlock**

4.2 Video switching operation

Specific operations are as follows

① Long press the F1 key and select input 1 (video switch), press the "OK" key, enter the video switching mode

Video switching mode (picture 1)

② Switch the input to the output

Operation format: "input channel" + "output channel" + "OK"

4.3 COPY EDID of HDMI Display

Specific operations are as follows

① Long press the F1 key, select input 2 (HDMI EDID copy), press the "OK" key, enter the copy EDID mode.

② Select the corresponding output EDID and copy to the input, the selected channel will automatically read EDID of the HDMI Display (such as TV).

HDMI EDID copy mode (picture 2)

③ Copy output EDID to the input

Operation format: "input channel" + "output channel" + "OK".

4.4 COPY EDID of HDBaseT output

Specific operations are as follows

① Long press the F1 key, select input 3 (HDBT EDID copy), press the "OK" key, enter the copy EDID mode.

② Select the corresponding output EDID copy to the input, the selected channel will automatically read EDID of the HDMI Display (such as TV).

HDBT EDID replication mode (picture 3)

③ Copy output EDID to the input

Operation format: "input channel" + "output channel" + "OK""

4.5 Inlay(built-in) A selection

The built-in EDID A

The built-in EDID A includes 8 options as follows:

	OUT1	4K60-420-2D-2.0(Default EDID)
	OUT2	4K60-420-2D-5.1
	OUT3	4K60-420-2D-7.1
	OUT4	4K60-2D-420
INLAY A	OUT5	4k30-2D-2.0
	OUT6	4k30-2D-5.1
	OUT7	4k30-2D-7.1
	OUT8	LENOVO 4K30

Specific operations are as follows

① Long press the F1 key, select input 4 (Inlay A), press the "OK" key, enter the built-in EDID mode

Built in EDID mode (picture 4)

② Select built-in EDID to the input

Operation format: "input channel" + "output channel" + "OK".

4.6 Inlay(built-in) B selection

The built-in EDID B includes 8 options as follows:

	OUT1	1080P-2D-2.0
	OUT2	1080P-2D-5.1
	OUT3	1080P-2D-7.1
	OUT4	1080P-3D-2.0
INLAY B	OUT5	1080P-3D-5.1
	OUT6	1080P-3D-7.1
	OUT7	1080P-2D-LPCM2.0
	OUT8	720P-2D-2.0

The specific operation is as follows:

① Long press the F1 key, select input 5 (Inlay B), press the "OK" key, enter the built-in EDID mode

Built in EDID mode (picture5)

② Select built-in EDID to the input

Operation format: "input channel" + "output channel" + "OK"

4.7 Baud Rate Settings

Baud rate setting includes following eight options:

Corresponding output port	Baud rate parameter
OUT-1	115200（Default）
OUT-2	2400
OUT-3	4800
OUT-4	9600
OUT-5	19200
OUT-6	38400
OUT-7	57600
OUT-8	115200

Specific operations are as follows

① Long press the F1 key, select input 6 (baud rate settings), press the "OK" key, enter the baud rate setting mode.

Baud rate setting (picture 6)

② Select baud rate to the corresponding output channel and press "OK" to confirm.

4.8 Timing shutdown Function

Timing shutdown setting includes eight options as follows:

Corresponding output port	Shutdown time (hours / min)
OUT-1	NONE
OUT-2	00H05M
OUT-3	00H10M
OUT-4	00H30M
OUT-5	01H00M
OUT-6	03H00M
OUT-7	12H00M
OUT-8	24H00M

Specific operations are as follows

① Long press the F1 key, select input 7 (timing shutdown settings), press the "OK" button, enter the timing shutdown mode

Timing shutdown settings (picture 7)

② Select the shutdown time to the corresponding output channel, and press "OK" to confirm.

4.9 System Settings

System setting includes two options as follows:

Corresponding outlet	Setting details
OUT-1	Reboot
OUT-2	Factory reset

The specific operations are as follows:

① Long press button "F1 "and select input 8 (system Settings) ,press "OK" ,enter the system settings mode .

System Settings (picture 8)

② Press Output from 1-2, select set reboot or factory reset for the corresponding output channel, press "OK" to confirm.

4.10 Check information for Output

Long press button "F1 "to check information for the output .(such as video switch/EDID)

Check Output channel (picture 9)

Check EDID channel (picture 10)

EDID channel nouns explanation :

A ⟹ Inlay A ⟹ User (built-in EDID A)

B ⟹ Inlay B ⟹ User (built-in EDID B)

F ⟹ Far-end ⟹ Far end (HDBT)

N ⟹ Near-out ⟹ Loop out （HDMI）
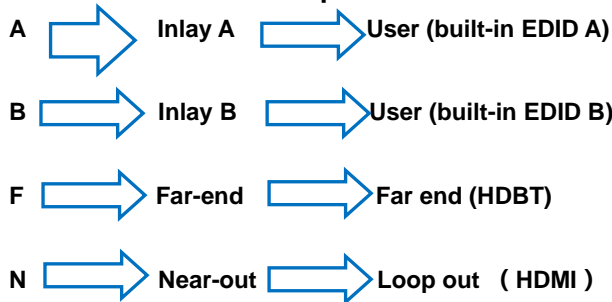
The specific operations are as follows:

① In video switch mode, input/output EDID mode , short press "F1 " to check the current output status.

② After the checking, press the button "OK" to exit the mode.

4.11 Boot/Standby interface

The key time interval is no more than 60 seconds. If over 60 seconds, the LCD screen will automatically enter the backlight mode and return to the video channel main interface.(the default time is 60 /LCD backlight brightness is100, this can be set by the commands)

Boot/standby main interface (picture 11)

5. Connecting and Operating

1). Connect the HDMI input sources (such as HD-DVD, PS3, STB etc) into HDBaseT Matrix.

2). Connect Cat5e/6 cable to HDBaseT output port of HDBaseT Matrix and HDBaseT input of Receiver.

3). Connect HDMI sink devices (such as HD-LCD, HD-DLP) to the Receiver.

4). Power on the input source you want to show.

5). Connect the power cable into HDBaseT Matrix and turn on the display you want to watch.

6). Use remote or push the button to choose input source.

*Note: Do not dispart the machine when power on because there is 220V AC power inside the machine!

## 6. Application Diagram
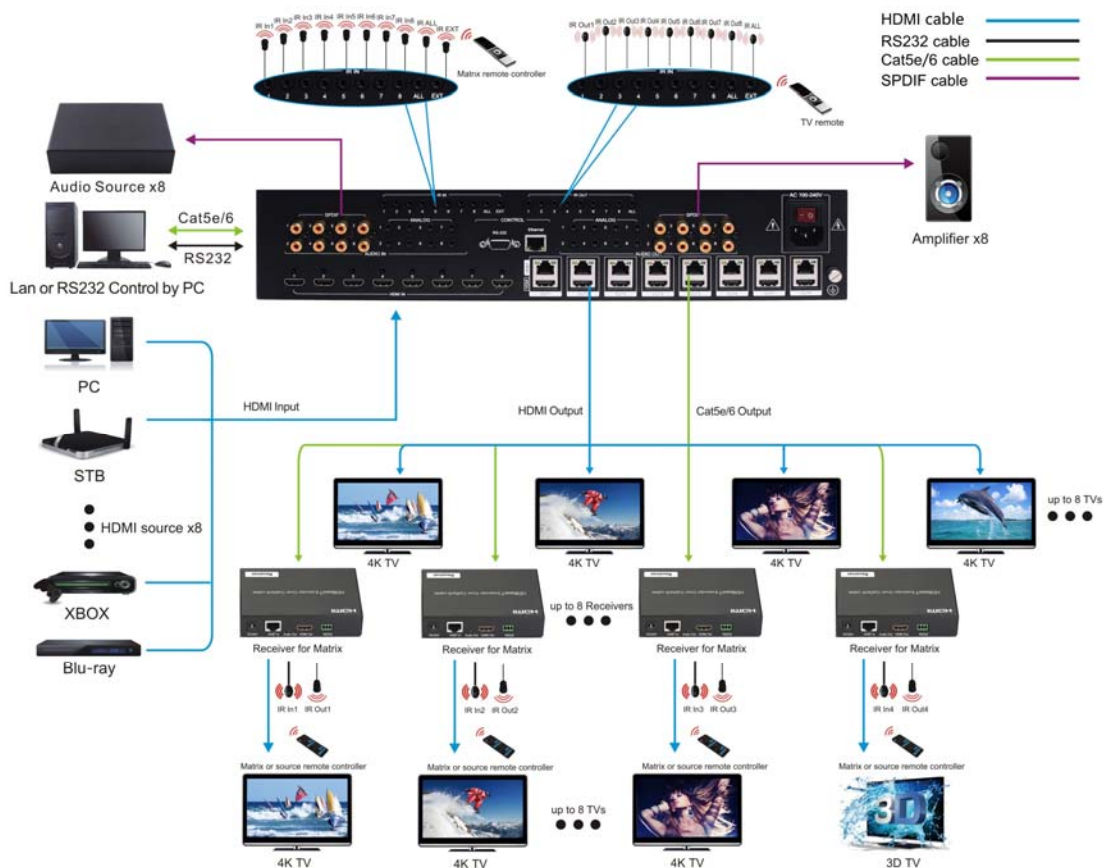
7. Remote Control Description
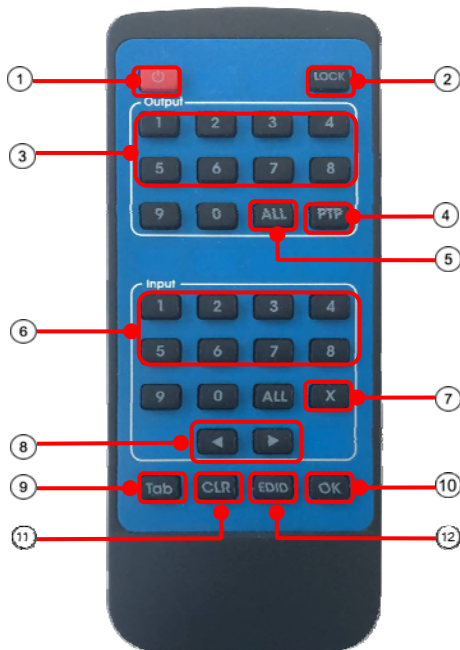
① Standby Mode.

② Lock or Unlock the Panel Button.

③ Choose output from 1-8.

④ PTP button: Mirror all inputs and outputs
    (Ex. Input 1 to output 1, input 2 to output 2, etc)

⑤ Choose all the outputs.

⑥ Choose input from 1-8.

⑦ X: Close input port which you select

⑧ Left arrow button to backward the input port,
    right arrow to forward input port.

⑨ Long Press "F1".

⑩ Long press "OK".

⑪ Short Press" F1".

⑫ Short Press "OK".

Note: ⑧ ⑨ ⑩ ⑪ **please refer to 4.1.**

8. IR system

The matrix can pass the IR signal through the IR system to the HDMI source or pass the IR signal from the HDMI source to the HDMI sink
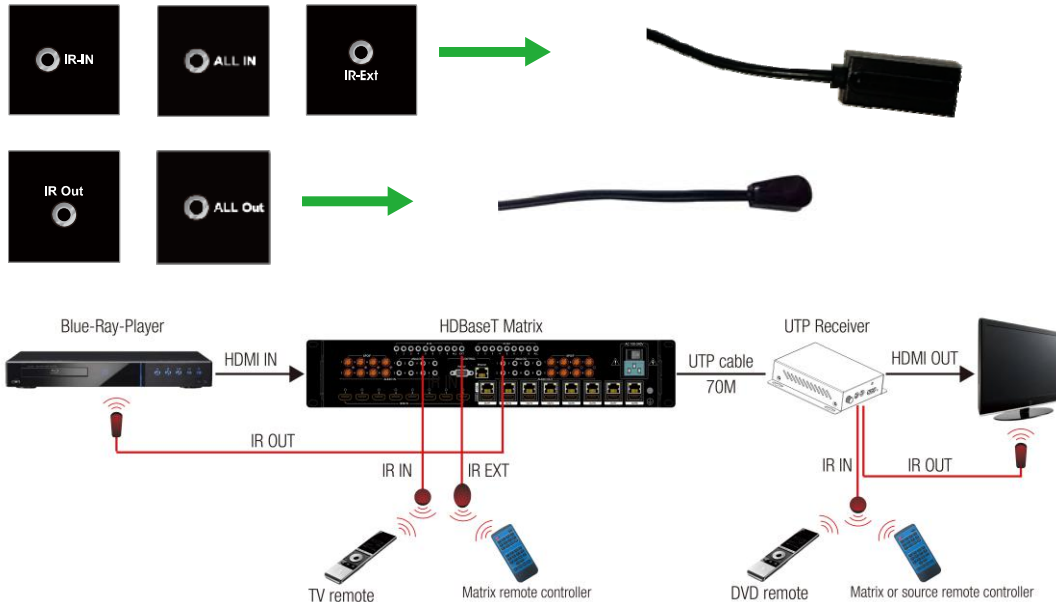
1) Control the sources at the sinks side

Step1: Connect 8pcs "IR Out" cables to "IR Out" ports 1-8 on the matrix, connect 8pcs "IR In" cables to the "IR In" ports 1-8 on the receivers.

Step2: Affix the 8xIR emitter of "IR out" cables to the IR window of the 8xHDMI source

Step3: Aim the remote control of HDMI source which you choosed to the "IR In" cable which connected to the receiver.

For example:

If you choosed HDMI source1, then just aim the remote control of HDMI source1 to the "IR In" cable which connected to the receiver.

2) Control the sinks at the sources side

Step1: Connect 8pcs "IR Out" cables to "IR Out" ports 1-8 on the receivers, connect 8pcs "IR In" cables to the "IR In" ports 1-8 on the matrix.

Step2: Affix the 8xIR emitter of "IR out" cables to the IR window of the 8xHDMI Sink.

Step3: Aim the remote of HDMI sink to related IR receiver of HDMI Matrix.

For example:

If you need control HDMI Sink1, then just aim the remote of HDMI Sink1 to the "IR In1" port of HDMI Matrix.

3) Control the HDBaseT Matrix at the sinks side

Aim the remote of the HDBaseT Matrix to the "IR In" cable which connected to the receiver.

4) Control the HDBaseT Matrix from "IR Ext" port

Aim the remote of the HDBaseT Matrix to the "IR In" cable which connected to the "IR Ext" Port.

5) IR In----"All" : for any one of the IR in from 1 to 8

6) IR out----"All" : for any one of the IR out from 1 to 8

9. RS232 Control

9.1 Software Control (PC tool)

Connect the 8X8 HDBaseT Matrix to PC with a RS232 cable, open the software included in the CD Manual. Select the correct port which is connected with PC, set the COM port as below, click Connect to get connected.
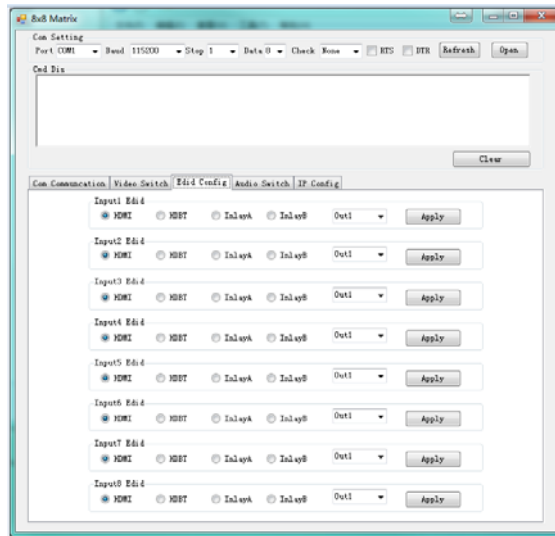
Baud Rate:	115200 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit
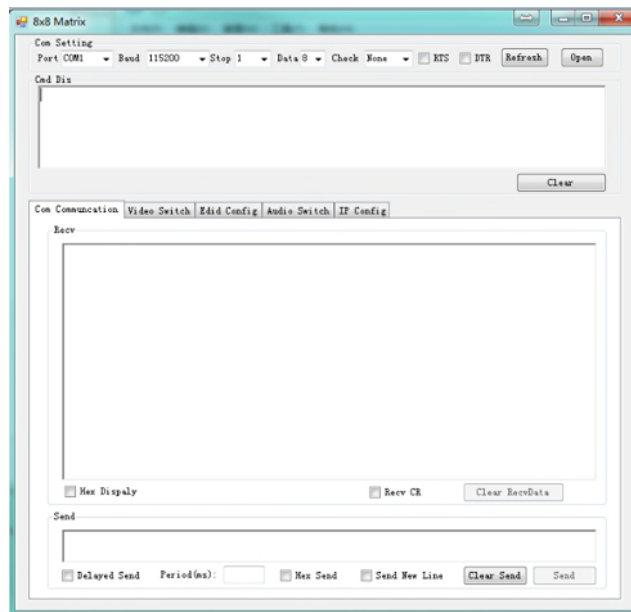
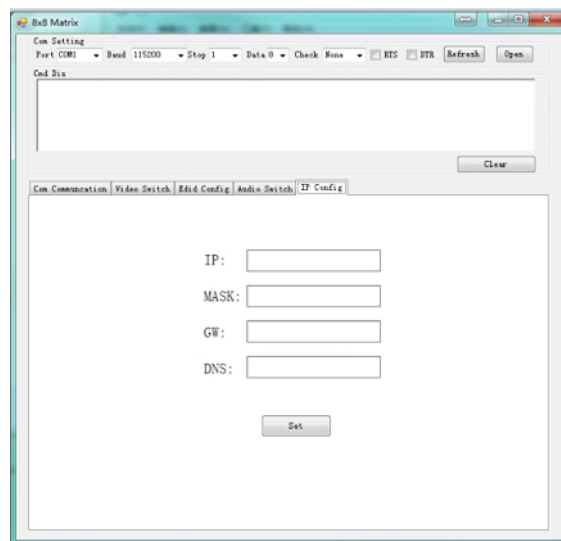Introduction of the main interface of the PC tool(picture 12)
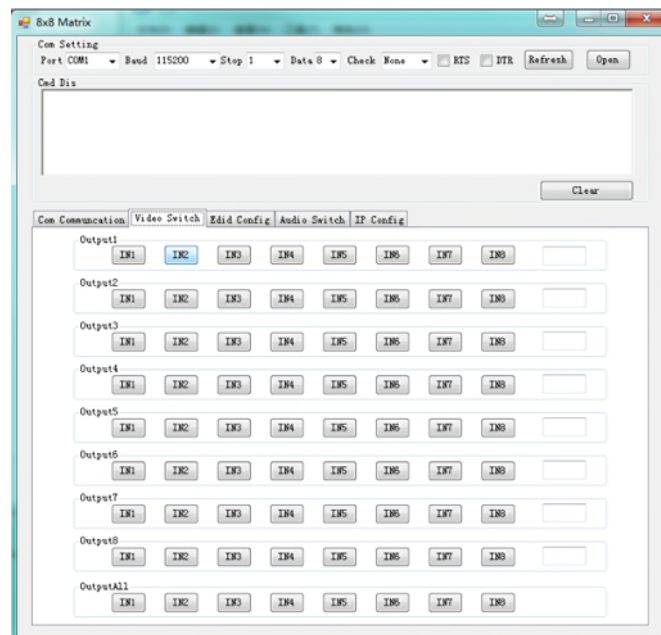
Switch video interface(picture 13)

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EDID config Inferface(picture 14)

Audio Switch interface(picture 15)

IP config interface(picture 16)

9.2 Command Control

Open the Control Software.

We take "SSCOM32" as an example.

Step1: Double click the software to install the RS232 control software in the PC.

Setup Icon

Step2: Enter the interface as below:
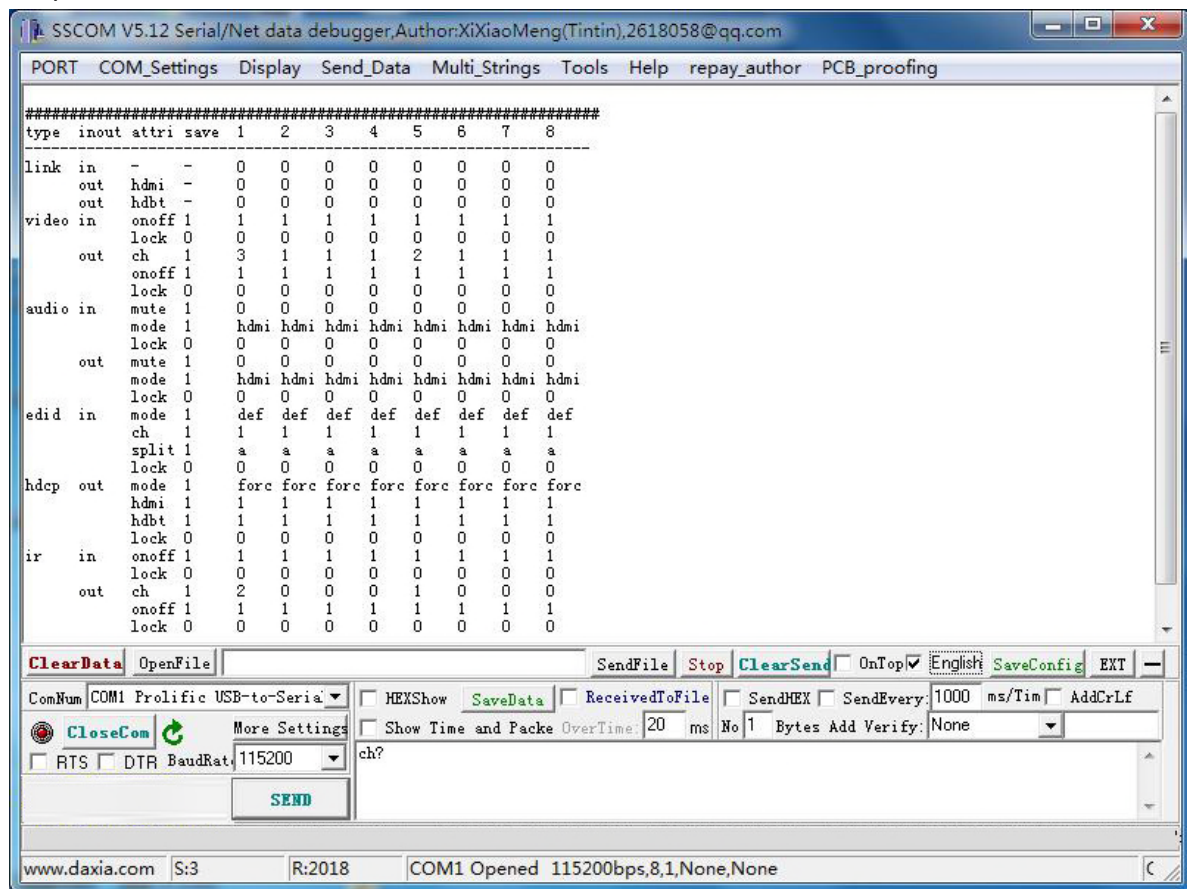
Picture-PC port control interface(picture 17)

Then we can send commands to control the matrix.

The command list is included in the CD Manual .

10. Web Control
The default IP Address of the Matrix 192.168.1.88, Mask: 255.255.255.0,
GW: 192.168.1.1, DNS: 114.114.114.114.
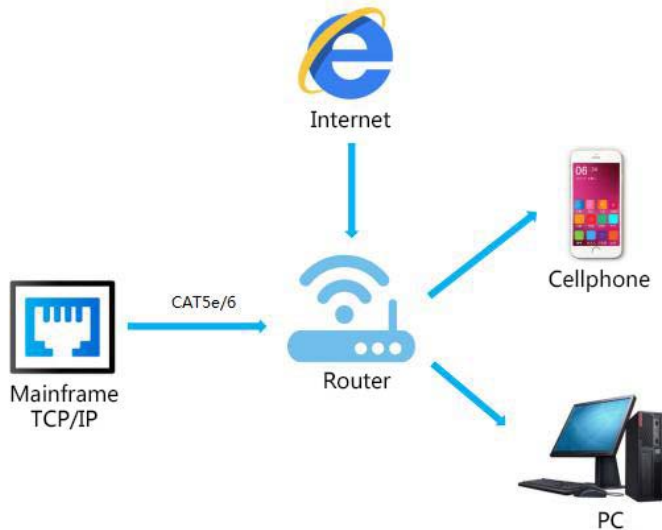
10.1 Change the IP address of your PC.
1). Connect the Ethernet port of matrix to the Ethernet port on PC by a crossover cable with RJ45 connectors.

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). The local Area commotion properties window for Network selection appears as below::
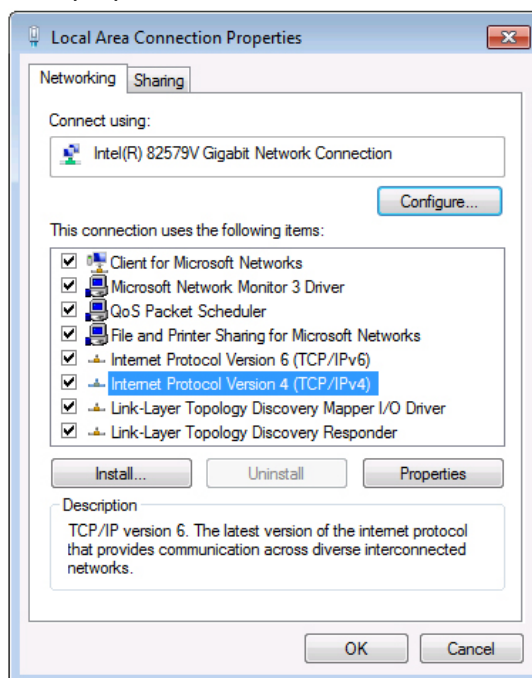
Picture 18

4). Click the Highlight **Internet Protocol Version 4 (TCP/IPv4)**.

5). Click **Properties**.

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 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.88).
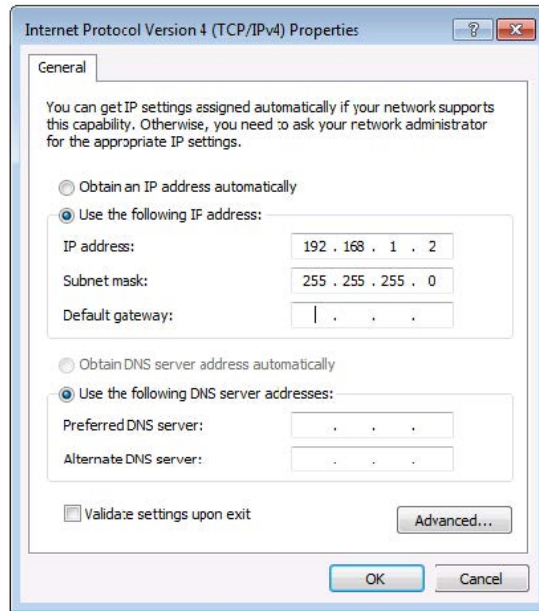
Picture 19

7). Click **OK**.

8). Click **Close**.

10.2 Enter Web and Control.

1) Enter the default IP address of the matrix: 192.168.1.88.

2) You will see following picture and control:
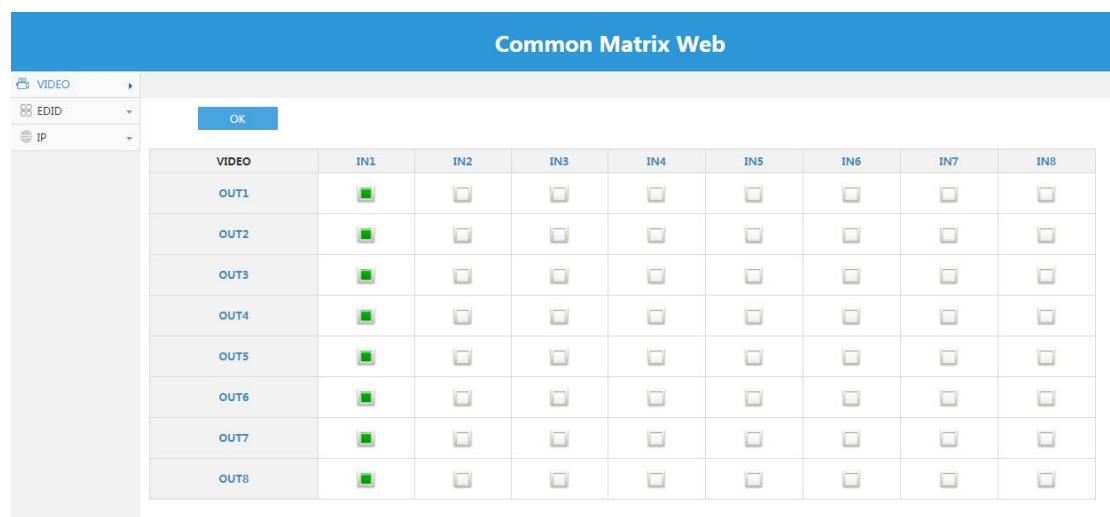
Video Switch(picture 20)
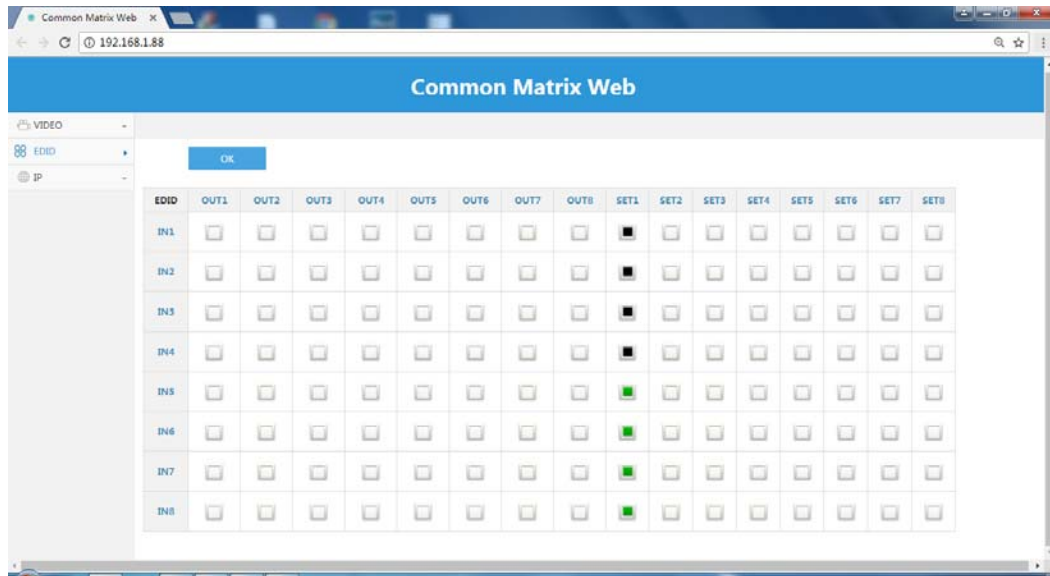
EDID Setting(picture 21)
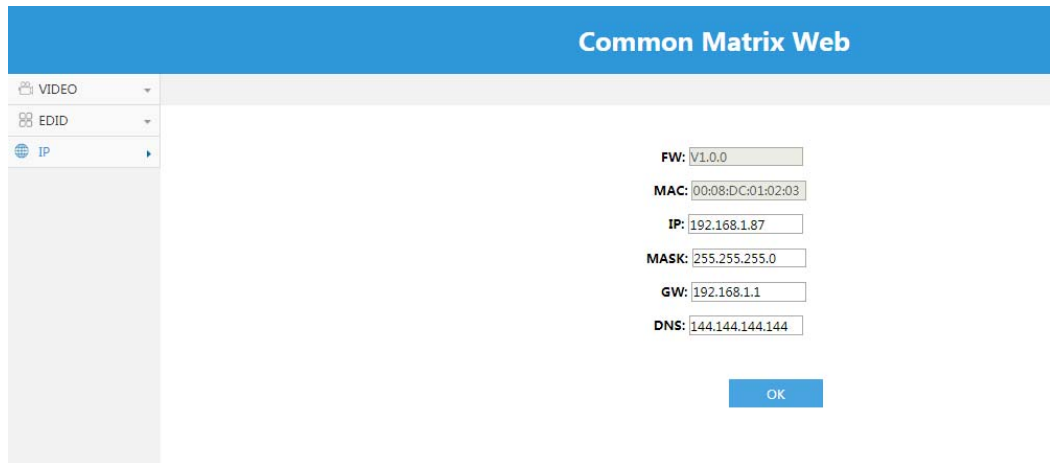
IP Setting(picture 22)

EDID Switch(picture 23)

Note:

Click mouse once, green, mean HDMI EDID copy

Click muse twice, black, mean HDBaseT EDID copy

SET1-8-----Green: Inlay A, Black: Inlay B

11. Audio Introduction

The HDBaseT Matrix supports HDMI Audio , Analog and SPDIF Audio Embedded, Analog and SPDIF Audio Extraction .

1) HDMI Audio: Support PCM 7.1, Dolby , DTS Audio
2) Analog Audio embedded (under 4K@60HZ 4:2:0)
3) SPDIF Audio embedded (under 1080P@60HZ)

Choose the Audio by PC Tool or sending commands.

12.RS232 Pass through

By RS232 Command , the matrix can send RS232 data to control the receivers ,also the receiver can send RS232 data to control the Matrix.

Please refer to the command list which included in the manual.

13. USB Online upgrading Firmware

Step1: Copy the software "Virtual COM Port Driver(V1.3.1) " from the CD Manual.
Double click the software to install it on the PC.
Step2: Connect the Matrix with PC by USB Micro Cable.
Step3: Open the Upgrade Software to upgrade firmware (Including in the Manual)
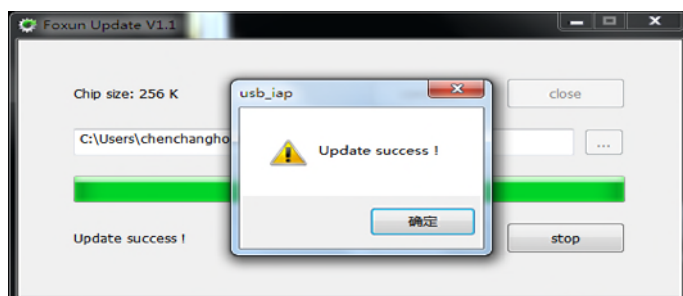

Step4:Click "Connect"
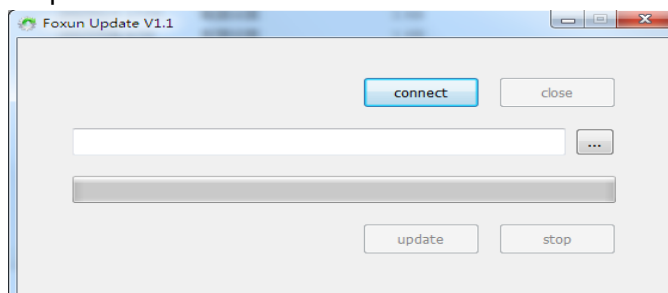
Step5: Click [...] to upload the firmware

Step6: Click "Update"to start Upgrade.

Step7: When finished the upgrading , it will show"Upgrade success".

Note: When it stops during the upgrading, you'll need reboot the matrix and re-upgrade it.

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.

（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 of 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 WARRNTY. (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.