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## HDMI-88 MATRIX



**Version number : V1.12.16**

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## Safety Reminder

To protect the device and operating personnel from electrostatic discharge, you need to check and ensure that the device is grounding well before the device is powered on. Please observe the following when you install, use, maintain this equipment.



Make sure the device ground connection.

- Please use single-phase three wire system AC 220V power supply, and ensure all transmission system is grounding well.
- To protect operating personnel and the device , please turn off all power supplies and pull the plug before moving the device or doing some specific works witch need to be done when the electricity is turned off . Please turn off the main power switch on rainy days or when not in use for a long time.
- Please do not put anything upon the cables, or tread the cables.
- To avoid damaging the device, please turn off power supply before plugging cable into the device or pulling cable from device. The damage caused by plugging/ pulling cables without turning off power supply is outside the scope of the warranty.
- The power of the device gives out heat when it works, so it's necessary to keep the work environment ventilated to protect the device from the damage caused by over temperature.
- Do not place the device in very cold or very hot places. Do not sprinkle any corrosive chemicals or liquid on or around the device.
- To avoid accident or any further damage ,non-professionals please do not dismantle or maintain the device without permission.

# 1. Product Introduction

It's a fixed 4K HDMI-88 Matrix, with EDID management it can perfectly work with HDMI displays. It supports 8 HDMI inputs and 8 HDMI outputs, and every HDMI input and output supports 1080p Full HD up to 4K30 plus all 3D formats and independent EDID management. It can work with Blu-Ray players, Set-Top boxes, Home Theater PCs, and game consoles which connect to an HDMI display. Supports RS-232, TCP/IP and front buttons to control.

## 2. Product Index

- ❖ ? HDMI V1.4 supports: 4K2K@30Hz, 1080P 3D@60Hz
- ❖ ? Deep Color support 48/36/30/24-bit
- ❖ ? Supports LPCM 7.1CH, Dolby True HD, Dolby Digital Plus and DTS-HD Master Audio transmission
- ❖ ? Allows any source to be displayed on multiple displays at the same time
- ❖ ? Allows any HDMI display to view any HDMI source at any time
- ❖ ? Supports 23 formats independent EDID, including 8-output EDID, 15 internal EDID.
- ❖ ? Supports RS-232, remote control, on-panel control and TCP/IP Control
- ❖ ? Front-panel LCD display for status feedback

## 3. Operation and connection

1. Connect signal source such as Blu-ray player, game controller, A/V receiver, cables, satellite receiver etc. to the HDMI input port of the matrix. Please do not hot plug! Please turn off power supply before plugging /pulling cables and operate carefully. Connecting signal sources with power-on may cause circuit damage.
2. Connect the HDMI output port of the matrix to HD display or HD projector with HDMI input port. Notice: It's better to use High-Speed HDMI Cable when the transmission distance is too long.
3. Firstly power on the signal source , then the matrix(with power supply) , finally devices connected to the output port .
4. After power on, every display device should display the specified signal. Make sure the devices are normal. Testing switching functions by matched IR remote control. If one of the displays failed to receive signal correctly, enter the menu of display, adjust the resolution from MIN to MAX until the signal is displayed normally. A 24 Hz refresh rate may work better than 60 Hz or higher.

## 4. Specification

Model	FIX-HDMI-88
Name	HDMI88 Matrix
Resolution ratio	Supports : 480i, 576i, 480p, 576p, 720p, 1080i, 1080p@24/30/50/60Hz, 4K@30Hz, 1080P3D@60Hz
Input ports	8×HDMI, 1×RS-232(control), 1xRJ-45(control)
Output ports	8×HDMI
ESD Protection	Human-body Model: ± 8kV (Air-gap discharge) ± 4kV (Air-gap discharge)
ESD Protection	12 V/3 A DC (US/EU standards, CE/FCC/UL certified)
Controlling	Supports remote control, front buttons control, RS232, LAN control
Input voltage	100VAC ~ 260VAC, 50/60 Hz, the adaptive power supply:23 W (Max)/ 0.5w (stand by)
Dimension(mm)	480 mm (W)×252 mm (D)×44 mm (H)
Weight	3.5Kg
Operating Temperature	0 °C~40 °C/32 °F~104 °F
Storage Temperature	- 20 °C~60 °C/- 4 °F~140 °F

## 5. Packing

No.	Name	Qty	Unit
1	HDMI-88 Matrix	1	Pcs.
2	DC12V power adapter	1	Pcs.
3	Remote Control	1	Pcs.

## 6. Description of operation and function



### 6.1 Description of front panel

**1 . HDMI input selection button area :** Press selection buttons to check input situation. HDMI input selection button 1 -8 : Select input port (e .g . Input 1 to output 1, 2, 3 .Press button 1 on the IN side and the indicator of button 1 is on , then press button 1, 2, 3 on the OUT side and indicators are on as well .

**2 . HDMI output selection button area :** Press to select the output from 1 to 8 . For example , press button 3 on the OUT side to select it as an output port (the indicator lights) , press it again to cancel the selection (the indicator goes out) .

**3. IR Port :** Receive the remote control signals

**4.LCD display :** Showing the status of current switching , EDID information and so on .

#### 5.Function Keys :

**UP button :** Page up .

**EDID control :** EDID button : Press it to enter EDID set mode . EDID Read : For example , in order to read the EDID of output port OUT5 to input port 1 , we need to press the EDID button (the indicator of EDID lights) firstly , press the button 1 on IN side secondly , then press UP or DOWN button to select OUT5 , at the same time button 5 on OUT side lights , finally press ENTER button (the indicator of ENTER button will flash for one time) .

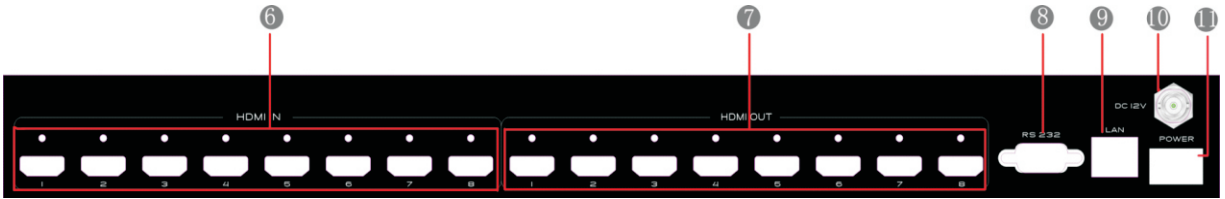
**SAVE button :** Press it to save scene .

**Down button :** Page down .

**Enter button :** Press to confirm and save the setting .

**Recall button :** Press it to recall the scenes.

## 6 2 Description of back panel



1 . **HDMI IN Area:** 1 -8 HDMI input

2 . **HDMI OUT Area:** 1 -8 HDMI output

3 . **PC CONTROL** : Show the status of input -output selection , EDID info and so on .

**TCP /IP** : This port is the link for TCP /IP controls , connect to an active Ethernet link with a RJ45 terminated cable .

**RS232** : Connect the matrix to PC control system with RS232 serial null modern cable .

4 . **Power port** : Use included DC adapter to power the matrix switcher .

## 6 3 Usage of matrix's PC software

Matrix controller is a green software . Just copy Client .exe to PC which is used to control the Matrix by RS232 COM port or TCP /IP .

### Preparation

1 . Connect PC and Matrix by RS232 cable (headers of cable should be FEMALE / MALE ) or TCP /IP ( local area network) .

2 . Power -up Matrix .

3 . Double click Client .exe icon to run it . Figure 6 .3 -1 pops up .

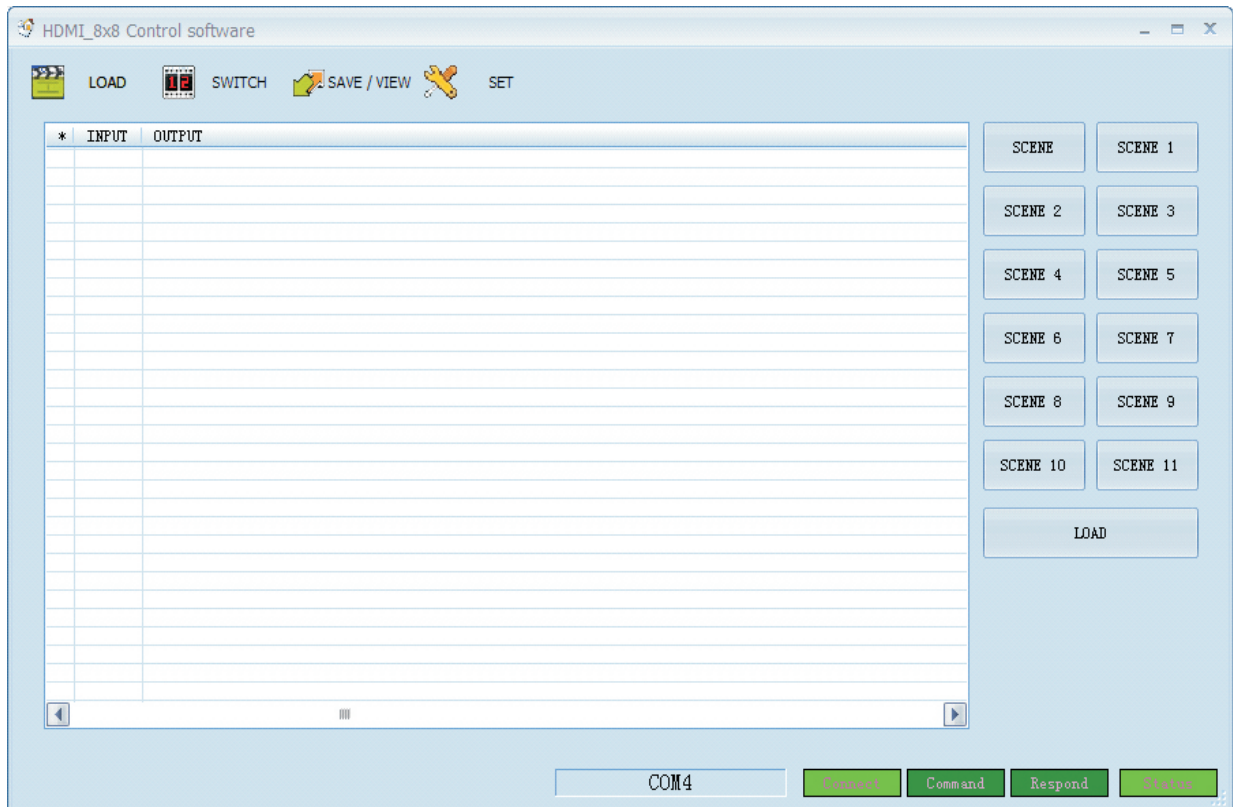


Figure 6 .3 -1



**A . Operating steps of serial port RS232 controlling matrix**

Connect the computer’s RS232 port and the matrix’s RS232 port with the matched RS232 cable . Determine the port number (such as com4) , click “ Setup” , select “COM” and “ COM4” communication port . If the connection is correct , the right -down “STATUS” will change to green , then you can click the “ LOAD” and read the parameters of the matrix . See figure 6 .3 -2.

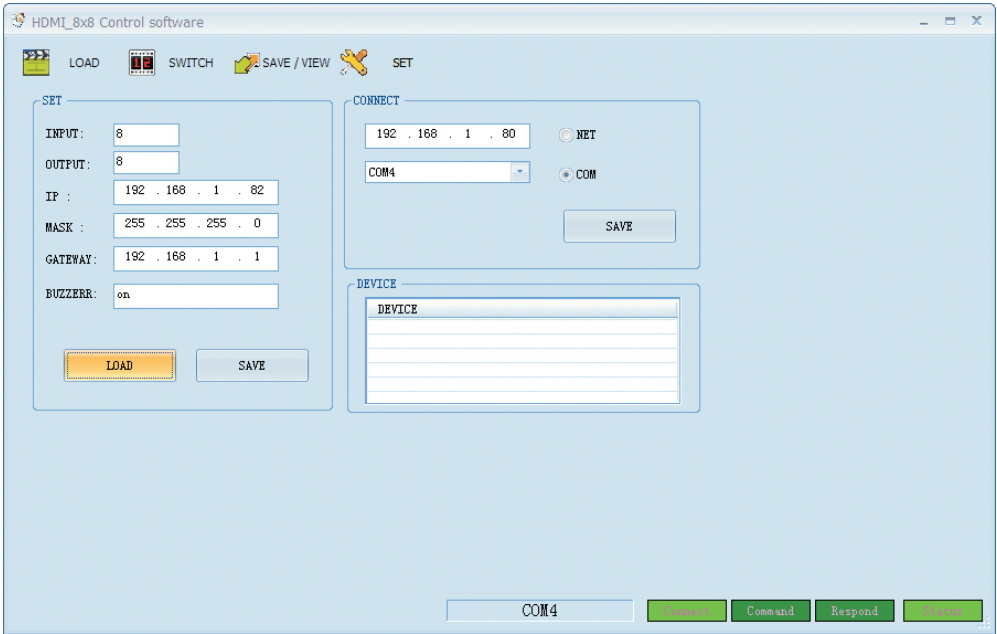


Figure 6 .3 -2

**B . Operating steps of LAN port controlling matrix**

Select “SET” to set up LAN port parameters . The software will search for devices automatically . And the IP address of the device will show in the “FIND DEVICE” , see Figure 6 .3 -3 . Double -click the IP address to fill it in .

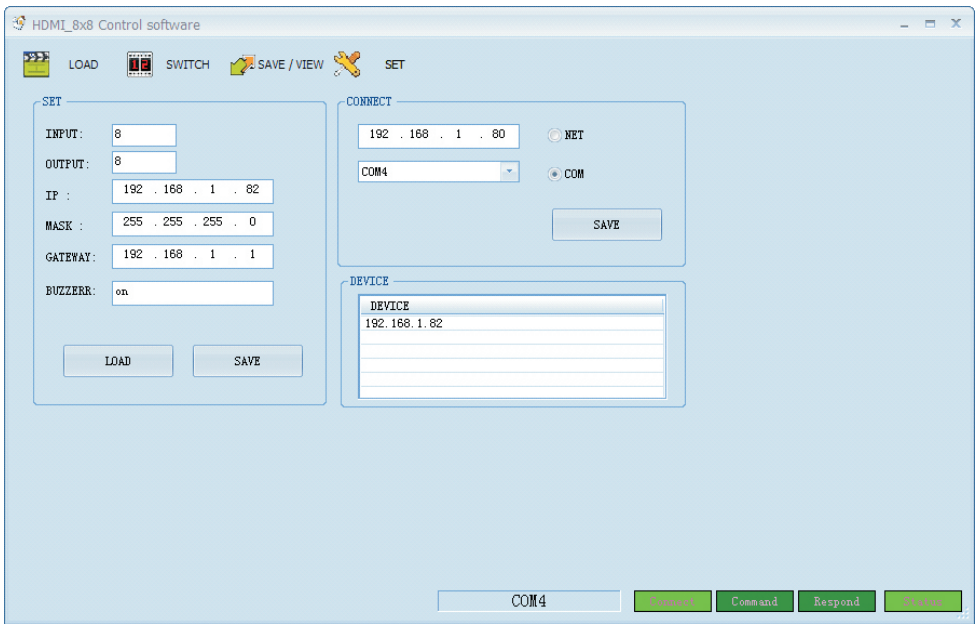


Figure 6 .3 -3

Then press “LOAD”. If the connection is correct , parameters of the matrix will appear on the interface .

Notice : It’s necessary to configure the PC’s IP when we use LAN port control mode . See Figure 6 .3 -4 .The default IP address of the matrix is 192 .168 .1 .80 , and the IP address of the matrix will be shown on the front panel when powered on .

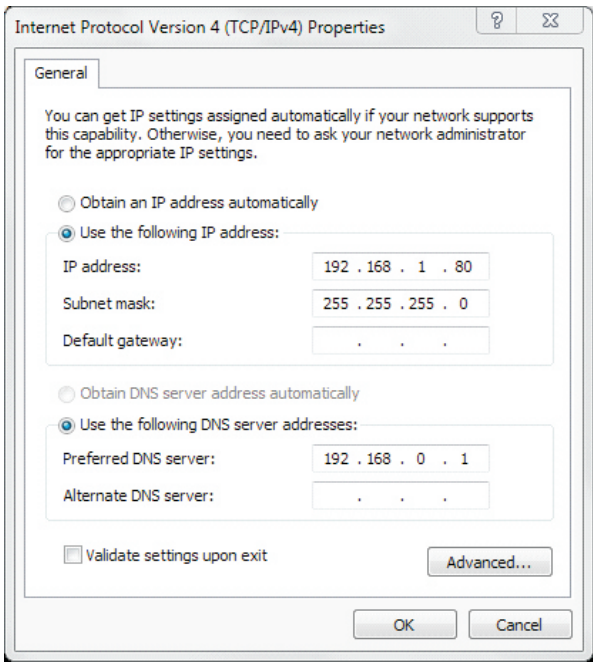


Figure 6 .3 -4

**6 .4 Operating steps of changing the name of the input /output**

Click “ SWITCH” to enter the switching interface . Select NO .1 input and double click it . Figure 6 .4 -1 pops up . Change the name of the NO .1 input signal and then save it .

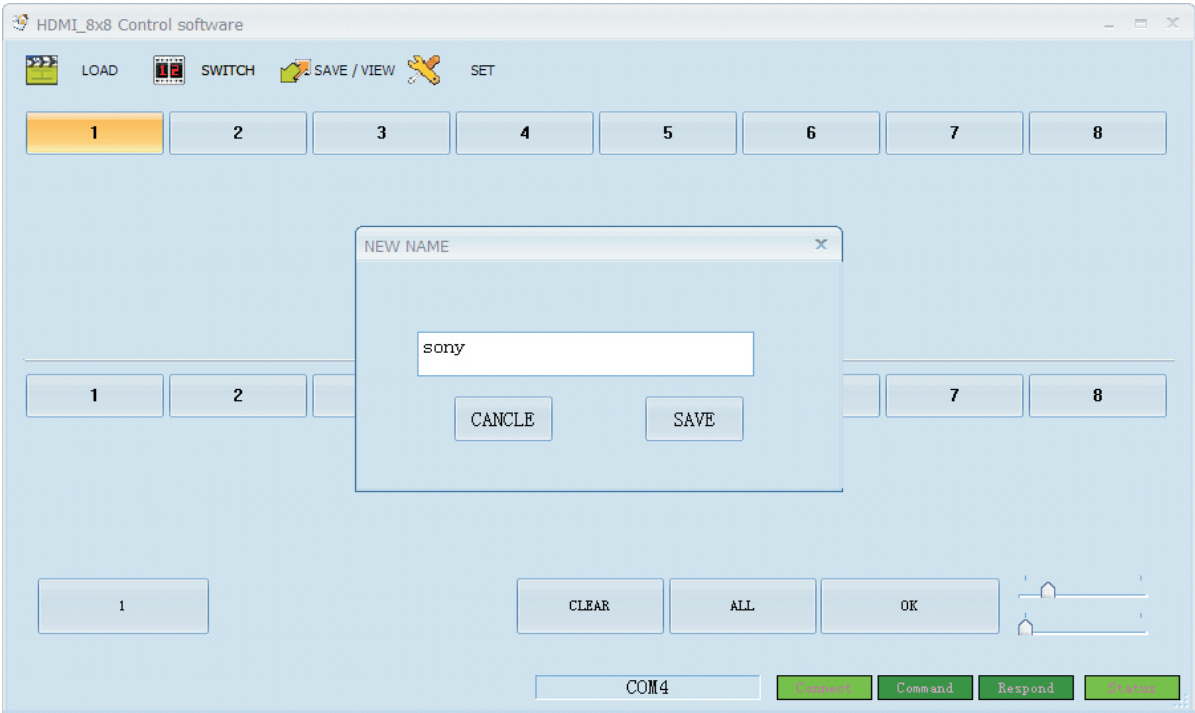


Figure 6 .4 -1



Click “ SWITCH” to enter the switching interface . Select NO .1 output and double click it . Figure 6 .4 -2 pops up . Change the name of the NO .1 output signal and then save it .

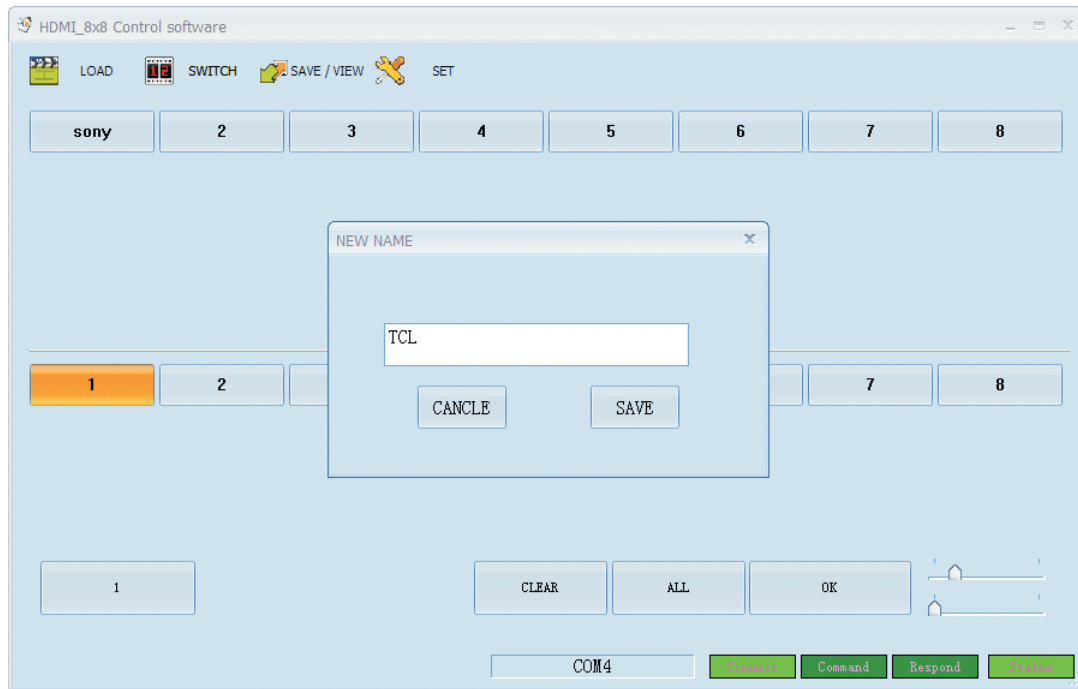


Figure 6 .4 -2

## 6 .5 Switching operation of the matrix

Press “ Switch” to enter the switching interface . See Figure 6 .5 -1 . Choose input port first , then choose the needed output port on the pop -up interface (the selected port turns yellow) . See Figure 6 .5 -2 . Click the number again to cancel the output port , and the port turns gray . You can choose multiple ports at a time . After all selection , press “OK” to achieve the switching operation .

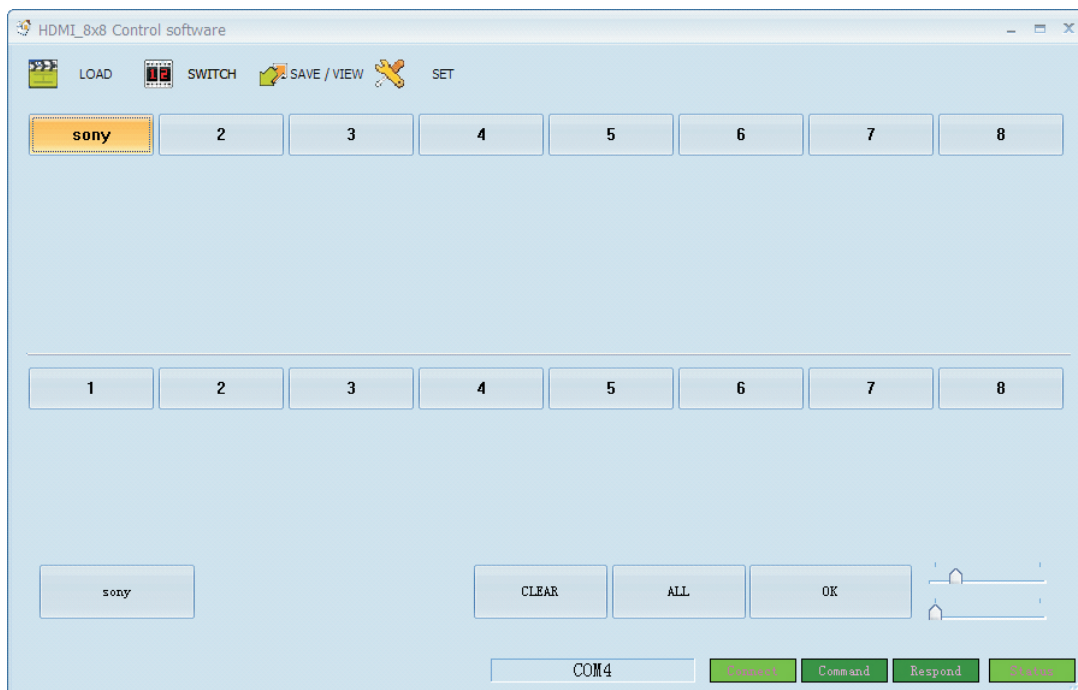


Figure 6 .5 -1

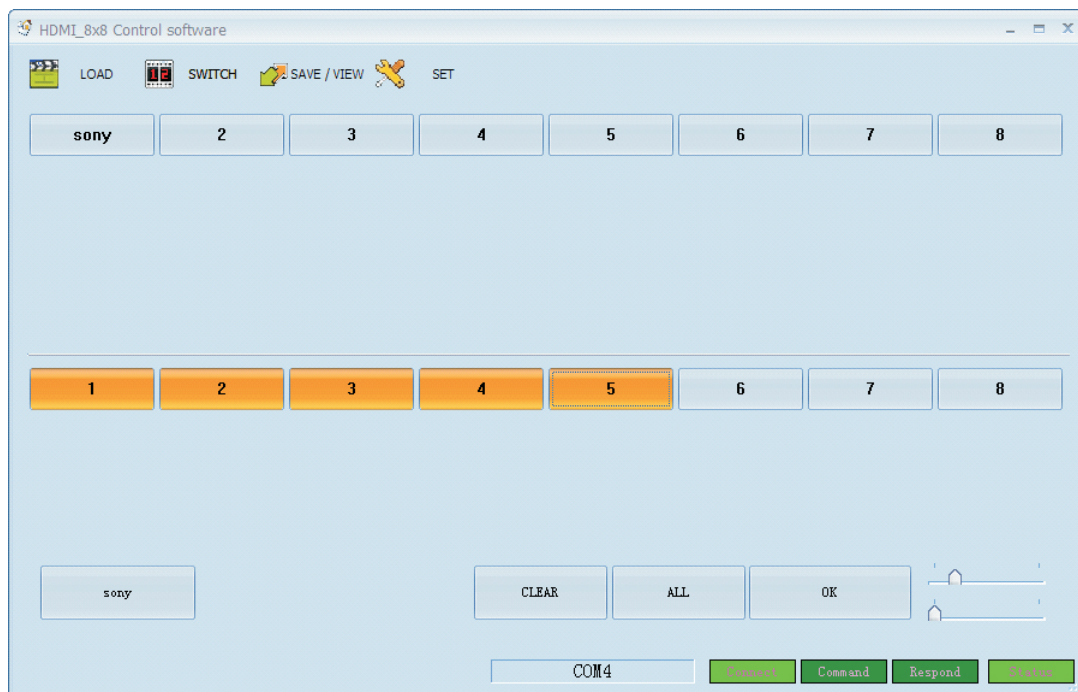


Figure 6.5-2

The INPUT 1 can be switched to OUTPUT 1, 2, 3, 4, 5, 6 by operating as Figure 6.5-1 and Figure 6.5-2.

## 6.6 Operating steps of saving scene

Click "SAVE VIEW" to enter "SAVE VIEW" interface. See Figure 6.6-1. Press "Previous" to check the current configuration of the matrix. Choose "Scene1", press "SAVE", then we can save the current scene to "Scene1" permanently. If "Scene1" already saved scene before, press "Scene1", then we can view it.

Notice: Scenes saved in "Scene 0" are current configuration, it changes according to the matrix's configuration.

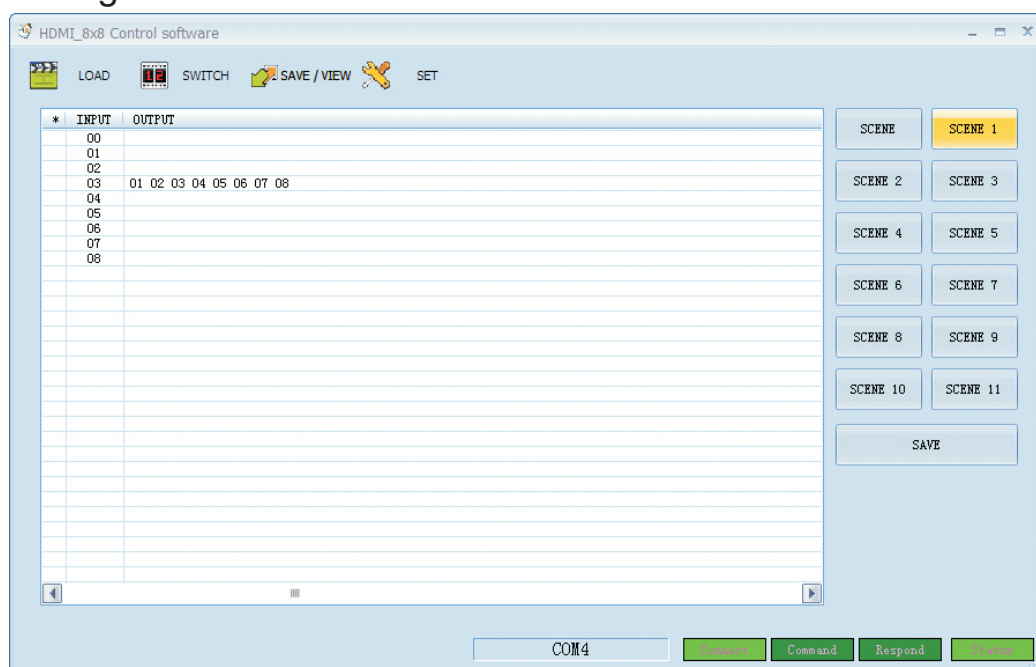


Figure 6.6-1

## 6.7 Operating steps of recalling scene

Click “LOAD” to enter “LOAD” interface . See Figure 6.7 -1 .Choose “Scene 1”and press “LOAD” to recall the scene saved in “Scene 1”.

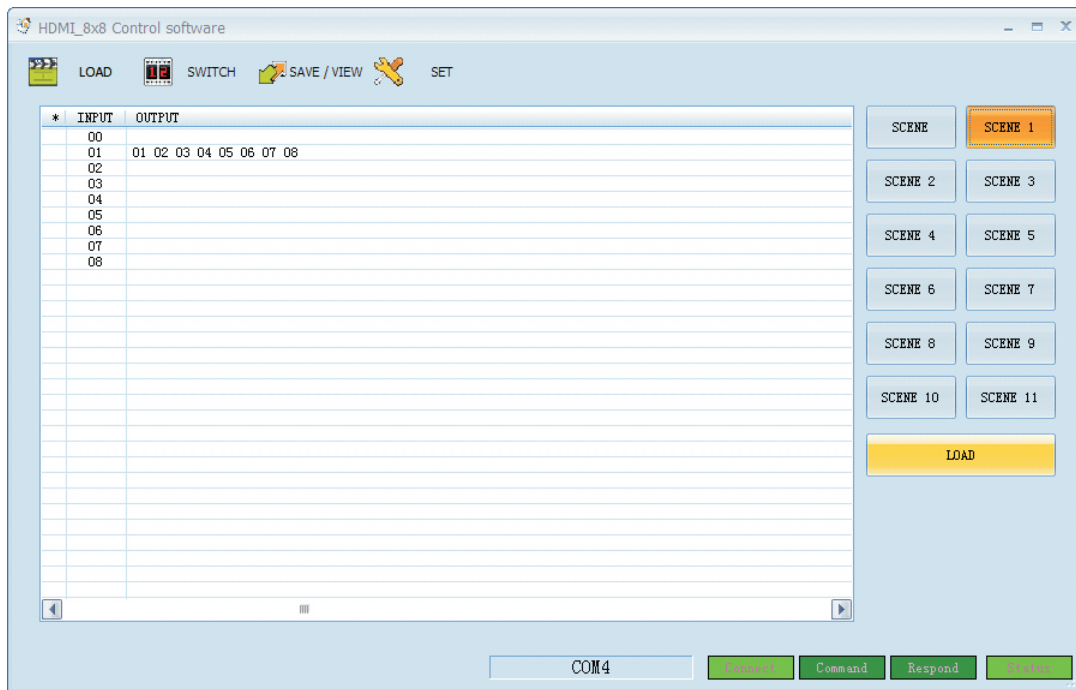


Figure 6.7 -1

## 6.8 Operating of EDID switching

Press “SWITCH” to enter switching interface , choose the needed channel (during 1 - 8 ) , enter “EDID” by right-clicking . See Figure 6.8 -1 .

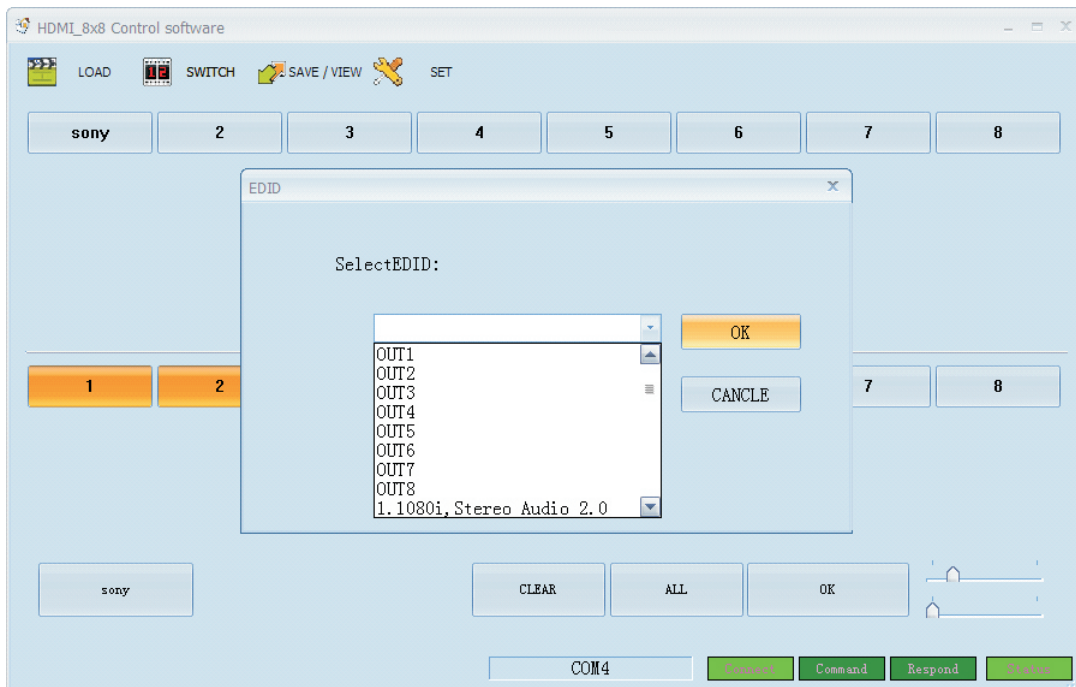


Figure 6.8 -1

Select needed EDID parameters , click OK . See Figure 6 .8 -2 .

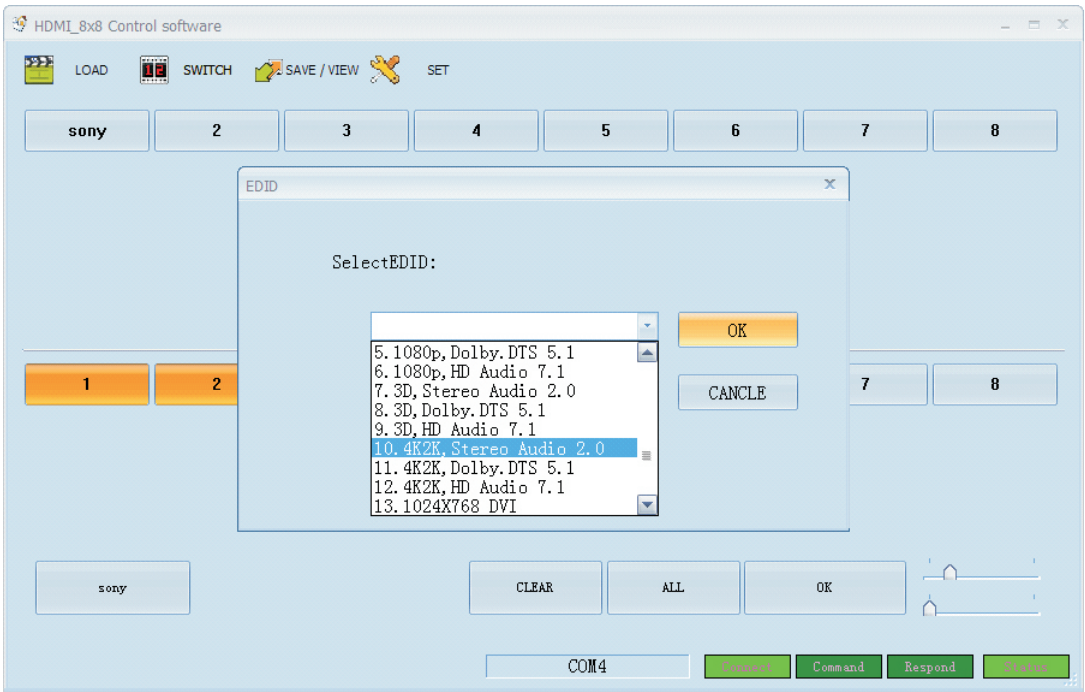


Figure 6 .8 -2

6 .9 EDID mode table

NO .	EDID Description	NO .	EDID Description
1	OUT1 (OUTPUT PORT 1 )	5	1080p , Dolby . DTS 5 .1
2	OUT2 (OUTPUT PORT 2 )	6	1080p , HD Audio 7 .1
3	OUT3 (OUTPUT PORT 3 )	7	3D ,Stereo Audio 2 .0
4	OUT4 (OUTPUT PORT 4 )	8	3D , Dolby . DTS 5 .1
5	OUT5 (OUTPUT PORT 5 )	9	3D , HD Audio 7 .1
6	OUT6 (OUTPUT PORT 6 )	10	4k *2k , Stereo Audio 2 .0
7	OUT7 (OUTPUT PORT 7 )	11	4k *2k , Dolby . DTS 5 .1
8	OUT8 (OUTPUT PORT 8 )	12	4k *2k , HD Audio 7 .1
1	1080i ,Stereo Audio 2 .0	13	1024x768 DVI
2	1080i , DOLBY /DTS 5 .1	14	1920X1080 DVI
3	1080i , HD Audio 7 .1	15	1920X1200 DVI
4	1080p , Stereo AUDIO 2 .0		

## 6.10 Control command LAN

IP address : 192.168.1.80 (default IP)

Protocol : UDP

Port : 4000

Command : send as hex

Control Instruction	Functional Description
EB 90 0C 00 00 80 0B 02 (x -1) (y +7) 00 00	Switch [x] input to [y] output
EB 90 0C 00 00 80 09 02 (0X) 00 00 00	Save current scene to [X] , [X] means number keys from 1 to 9
EB 90 0C 00 00 80 08 02 00 (0Y) 00 00	Load the input /output switching saved in [Y] , [Y] means number keys from 1 to 9

For example , input 1 Switch output 6 , send : EB 90 0C 00 00 80 0B 02 00 0D 00 00

(1 -1) = 0 , Hex is 00 , (6 +7) = 13 , Hex is 0D .

If input 1 Switch output 6 , 7 , 8 , send EB 90 0C 00 00 80 0B 04 00 0D 0E 0F 00 00

04 00 0D 0E 0F means : 04 there are 4 port for switching (1 input and 3 outputs) , the first one 00 is the input port , the remaining 0D 0E 0F are the output ports .

EB 90 0C 00 00 80 09 02 02 00 00 00 , save the previous scene to the 02;

EB 90 0C 00 00 80 08 02 00 02 00 00 , load 02 scene;

EB 90 0C 00 00 80 0B 02 01 0A 00 00

### RS232

Baud rate : 115200 , N , 8 , 1

Use RS232 direct cable

Control Instruction	Functional Description
[x] X [y] .	Switch [x] input to [y] output
Save [X] .	Save current scene to [X] , [X] means number keys from 1 to 9
Recall [Y] .	Load the input /output switching saved in [Y] , [Y] means number keys from 1 to 9

## 7 . Common Problem Shooting

**Q** : Serial port operation is out of order, can not control to switch ?

**A** : The serial port is damaged or not started

**Solution** : Make sure the port uses direct serial port line , check the connection of PC software serial port .

**Power failure** : Check the power fuses and connecting lines;

**Signal interference** : Make sure the cables and plugs are connected well , the cables meet the requirements , the system is ground connected well , the AC power between devices have the same grounding system;

**Accidental damage** : Sent back to the manufacturer for recondition.

## 8 . After Sales

### 8 .1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 3 (3 ) years following the date of purchase from the Company or its authorized distributors .

If the product does not work within the guaranteed warranty period , the company will choose and pay for the repair of the defective product or component , the delivery of the equivalent product or component to the user for replacement of the defective item , or refund the payment which users have made .

The replaced product will become the property of the Company .

The replacement product could be new or repaired .

Whichever is longer , any replacement or repaired of the product or component is for a period of ninety (90 ) days or the remaining period of the initial warranty . The Company shall not be responsible for any software , firmware , information , or memory data contained in , stored in , or integrated with the product repaired by the customer 's return , whether or not during the warranty period.

### 8 2 Warranty limitations and exceptions

Except above limited warranty , if the product is damaged by over usage , incorrectly use , ignore , accident , unusual physical pressure or voltage , unauthorized modification , alteration or services rendered by someone other than the Company or its authorized agent , the company will not have to bear additional obligations . Except using the product properly in the proper application or normal usage



## 9 . Version Information

Description of version ( Document number : DOC -*88 -HDMI )		
Date	Version number	Description
Dec 2016	V1 .01 .01	First version

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