# Matrix Control Software Instructions

Matrix Control	Matrix Control	history
software	software introduction	
V1. 02	V1. 02	20180414

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### 1. Overview

Thank you for purchasing our product. Please read the instructions carefully before use. This software is a test matrix developed with our matrix product and the host computer software of the control matrix. You can use this software to switch the matrix through the serial port or LAN. The software provides a variety of switching operations, simple operation, easy to use. In the face of compatibility issues, EDID editing can also be performed. We have reserved a variety of EDIDs. The default delivery mode is the combination of EDID. Users can also customize the fixed EDID through this monitoring software. The software can also adjust the EQ value. If customers encounter long-term and short-term problems at the engineering site, they can solve the problem by adjusting the EQ value. We also reserved the function of upgrading the program through the serial port to facilitate the later program upgrade.

Open the Matrix Control software. The interface is as shown below: There are 4 submenus

Matrix Control SoftWare V1.02	
Communication	ontrol & Test Edit EDID
Set Management	Data Display
In Port Count Out Port Count	
8 🐳 8 🐳	Stop Display 🕞 Clear Display 🗌 ASC
InCard Port Count OutCard Port Cour	
	Rx Data
Com Select Rate Select	Memo6
COM3 9600 💟	
Start Communication	
10112233445566778899AABB	
	Tx Data
	Memo2
	Data Analysis
	Memo4

## 2. Communication

### 2.1 Number of input and output ports

As shown below , In Port Count. Out Port Count : It is set according to the number of integral matrix channels, and is set correctly according to the number of actual input and output channels of the matrix. For example, an 8 input/output matrix, and the number of input/output ports is 8.



## 2.2 Card Port Count

As shown below , In Card Port Count. Out Card Port Count. It is set for the number of channels of the mixed matrix input/output card. Our mixed matrix is input to a single card with 4 channels. If it is a non-mixed matrix, it does not need to be set.



## 2.3 Communication Mode Settings

As shown below, There are two kinds of communication modes that can be set in the communication mode setting: serial port communication and network communication.

Com Select	Rate Select
💽 RS232	🔘 Net
💻 Start Com	nmunication

#### 2.3.1 Serial Communication

The serial number must be selected correctly. If the serial port is selected incorrectly, there will be problems with communication. The method to confirm the serial port number is : "my computer" —> "Right click" —> "Device Manager" —> "port" —> View the connected serial port.

Click to start the communication button, the interface is as shown below : If the communication is successful, the sent data packet is displayed below the Receive Data and Send Data columns.



#### 2.3.2 Network Communication

If only the general matrix switch can select the serial port, you can also choose network communication. The specific depends on the configuration of the ports on the matrix. For example, the HDMI0404 and HDMI0808 matrices only provide serial ports. The HDMI/DVI0404 (1U standard chassis) and HDMI1616 provide a network interface.

To select network communication, you need to set the IP for the matrix.

Click the Control & Test button, the interface is as shown below:

Communication	Matrix Switch	Control & Test Edit EDID
Set Management		Reboot or Reset
In Port Count	Out Port Count	Reboot Reset
4	4	
InCard Port Count		EDID Operate EQ Mode VH Check Print Com Net Ip
1	1	Local IP/Port Cloud IP/Port
Com Select	Rate Select	
СОМЗ	9600 🔽	
O R5232	💽 Net	Link Mode Static IP
Close Comn		Port 3000
Close com	iunication	IP 192.168.002.099 Setting
		Mask 255.255.255.000
		Gate 192.168.002.001

In the interface shown in the figure above, click the Net IP Settings button. The interface is as shown in the following figure:



Click the Local IP/Port Settings button. The interface is as shown in the

following figure:

Link Mode	Static IP	
Port	3000	
IP	192.168.002.099	Setting
Mask	255.255.255.000	
Gate	192.168.002.001	

Network communication setup instructions:

- If you select the DHCP mode, IP will be automatically obtained. The host IP, subnet mask, and default gateway can be set. Click the Configure button to configure the relevant IP information.
- If you select the Static IP mode, you need the network administrator to inform the network information in the environment where the matrix is located. Click the Configure button to configure the relevant IP information
- After the configuration, you need to restart the matrix to be effective. Then click "Network" -> "Start Communication" to implement network communication.
- The network needs to be networked after restarting, plus the video image output, so the network control time is 15 seconds later.

## 3. Matrix Switch

Matrix switching has the following three switching methods: button switch, Map switch, and grid switch. As shown below:

Matrix Control SoftWare V1.02	
Communication Matrix Switch C	ontrol & Test Edit EDID
Set Management	Button Switch Map Switch Grid Switch
	Switch Control
	Plan Management
InCard Port Count OutCard Port Cour	Plan1 S Load Interval(S) 10 🗧 🗆 Auto Load 😥 Read Plan
1 🔄 1 🚭	
Com Select Rate Select	Swich Data Buffer
COM3 9600 🔍	Command buffer,double click send again
RS232 O Net	

## 3.1 Button Switch

Click the button switch, the interface as shown below:

Button Switch	Map Switch G	rid Switch						
Switch Contr								
Plan Management								
Plan1 🔽 Load Interval(S) 10 🛱 🗌 Auto Load 🙋 Read Plan								
Swich Data Bu	uffer							
Command b	uffer,double clic	ck send again						
				198				
	OUT	AT T		<u> </u>				
IN: 01	OUT:	ALL						
				Cursor Shift				
	1	2	3	☑ Auto				
				O In O Out				
	4	5	6					
				Auto Save Plan				
	7	8	9					
		0	9					
				Enter Clear				
	0	AL						
			L					

1. There are two ways to select the IN and OUT channels:

When the automatic mode is valid, the input and output are automatically switched, and the input and output channels can also be manually selected. Input and output selection, click the OK button, you can achieve this switch.

2. Plan Management:

This software can save the plan when the matrix switch is available, so that it can be used for subsequent calls.

1) Call Plan

Preservation plans can be saved manually or automatically.

If you need to save the current switch status, select a name under the "Plan Management" section and click the "Call plan" button. If you check the "Auto save plan" option, the result of each switch will be automatically saved and the cycle will be overwritten. Up to 9 plans can be saved.

2) Read Plan

If you need to read a previously saved plan, you can find the saved plan name under the "plan management" column and click Read Plan.

" Load Interval" refers to the interval between the retrieval of the plan. If you check the "Auto Load", when reading the plan, the software can automatically read the previously saved plan.

#### 3.2 Map Switch

Click the Map Switch button, the interface as shown below:

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Out Port Selection				In Port Select and Switch
1 >> 1	1 >> 2	1 >> 3	1 >> 4	1 2 3 4
5	6	7	8	5 6 7 8
9	10	11	12	9 10 11 12
13	14	15	16	13 14 15 16

- Output port selection : A single click can also be dragged to select multiple, press the left mouse button is not loose, the mouse into a small hand can drag and drop the output port, Output blue highlights the selected output port.
- 2. Input port selection: Select the input button to complete the switching action.

#### 3.3 Grid Switch

Click the Grid Switch button, the interface as shown below:

Butto	n Sw	itch	Map	Swit	ch	Grid	Swite	h									
	0-1	0-2	O-3	0-4	O-5	0-6	0-7	O-8	0-9	0-10	0-11	0-12	0-13	0-14	0-15	0-16	One by One
IN-1																	1>>ALL
IN-2																	2>>ALL
IN-3																	3>>ALL
IN-4																	4>>ALL
IN-5																	5>>ALL
IN-6																	6>>ALL
IN-7																	7>>ALL
IN-8																	8>>ALL
IN-9																	9>>ALL
IN-10																	10>>ALL
IN-11																	11>>ALL
IN-12																	12>>ALL
IN-13													-				13>>ALL
IN-14																	14>>ALL
IN-15																	15>>ALL
IN-16																	16>>ALL

- Rows represent input, columns represent output, and click to switch. 1.
- You can select an input port corresponding to all output ports on the 2. right side.

## 4. Control & Test

。Click the Control & Test button, the interface displays as shown in the figure below: There are 5 buttons for EDID Operate, EQ mode, VH Check, print Com, and Net IP settings.



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#### 4.1 Reboot or Reset

- 1. Reboot: Restart the matrix.
- 2. Reset : Perform a factory reset operation on the matrix.

#### 4.2 EDID Operate

Click the EDID Operate button, the display interface as shown below:

EDID Mode			In Port Selection	
Merge	О Сору	O Pc Load		
O 4K		O 1080P	ALL 🔽	🕈 Setting
O 720P		O 480P		

There are seven types of EDID modes:

A. The default is a combination of EDID methods.

B. If the combination of EDID has incompatibility, you can choose "copy" mode.

C. PC Load: You can edit an EDID in "EDID Edit" and write it through your computer

D. the other 4 are fixed EDID, divided into 4 kinds: default 4K, default 1080P, default 720P, default 480P

After selecting the desired mode, you also need to click the "Setting" command button.

Input interface can choose the same or different EDID mode. If you choose the same EDID, select ALL at the input port.

EDID operation instructions:

- 1. Combine the EDID of the output port and use the EDID that the output display device is compatible with.
- 2. Specify a fixed EDID: predefined: four fixed EDIDs of 4k, 1080p, 720p, and 480p.
- 3. Copy mode: Use the EDID information of the output port directly. At

this time, you only need to select the input port.

4. PC Load mode: EDID must be edited and imported. It is necessary to ensure the correctness of EDID.

#### 4.3 EQ Mode

Click EQ mode button, the display interface is as shown below:

Rx EQ mode	In Port Selection	EQ value	
Oynamic	ALL 🔽	7	♦ Setting
O Static			V Setting

- 1. The same or different RX EQ mode can be selected for each input port
- RX EQ is divided into automatic EQ and manual EQ. When fixed EQ is selected, the appropriate EQ position can be selected under the fixed EQ value.
- 3. After selecting, click the Setting button to confirm the EQ mode.
- 4. The default factory setting of the matrix is the automatic mode. In case of special circumstances, if the customer uses a poor quality wire and the automatic EQ is inaccurate, a suitable manual EQ value can be selected.

#### 4.4 VH Check

Click VH Check button, the display interface is as shown below:

Recommend Mode				
O Mode1 O Mode2 O Mode3 O Mode4 ⊙ Mode5 O Self Define ♦ Setting				
V Clk Check	H Clk Check	In or Out	Port	
Min Check	Min Check	💿 In		
Changes Check	Changes Check	O Out	ALL 🔽	• Setting

- Recommend Mode : The default recommended mode 5 at the factory, generally does not need to be changed. In case of special circumstances, such as compatibility issues, you can try to select other recommended modes, or custom mode.
- 2. VH Check is only used by our engineers to judge the problem. Please do not change it at any other time.

#### 4.5 Print Com

Click the Print Com button, the display interface as shown below:

In or Out	Port	Print On or Off	
⊙ In ○ Out	ALL	<ul><li>On</li><li>Off</li></ul>	♦ Setting

Print Com is only used by our engineers when judging problems.

#### 4.6 NET IP

The NET IP setting operation has been introduced under 2.3.2 Network Communication and will not be described here.

## 5. Edit EDID

Click EDID edit button, the display interface is as shown below:

Login Advance Operation	
Password	#####
	Login Canncel

EDID editing and program upgrade are advanced operations. Non-professionals do not perform this operation. To enter the EDID interface, enter the password: LT123456. After the password is entered correctly, the EDID editing function is valid, and the hidden button is displayed: "Update Code".



note:

After the password is entered successfully, the EDID edit button and the Update Code button can be set

## 5.1 Edit EDID

Click EDID edit button, the display interface is as shown below:

Out Port	Open	© Save	Analysis
In Port	Clear	Read	Create
0 "	9		
Operation			
• Read Outport	O Read Inport		Create And Load
Read Outport			
Read Outport  X00,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0	FF,0xFF,0x00,0x32,0x8D,0	x01,0x04,0x90,0	0x01,0x03,0x6A,
Read Outport      x00,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0x	FF,0xFF,0x00,0x32,0x8D,0 59,0x32,0x78,0x0A,0x0D,0	x01,0x04,0x90,0 0xC9,0xA0,0x57	0x01,0x03,0x6A, ,0x47,0x98,0x27,
Read Outport     Read Outport     x00,0xFF,0xFF,0xFF,0xFF,0xFF,0x     x2F,0x16,0x01,0x03,0x80,0x     x12,0x48,0x4C,0x21,0x08,0x	FF,0xFF,0x00,0x32,0x8D,0 59,0x32,0x78,0x0A,0x0D,0 00,0x81,0x80,0x01,0x01,0	x01,0x04,0x90,0 )xC9,0xA0,0x57 x01,0x01,0x01,0	0x01,0x03,0x6A, ,0x47,0x98,0x27, 0x01,0x01,0x01,
Read Outport     Read Outport     x00,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0x	FF,0xFF,0x00,0x32,0x8D,0 59,0x32,0x78,0x0A,0x0D,0 00,0x81,0x80,0x01,0x01,0 01,0x01,0x1D,0x00,0x72,0	x01,0x04,0x90,0 )xC9,0xA0,0x57 x01,0x01,0x01,0 x51,0xD0,0x1E,	0x01,0x03,0x6A, ,0x47,0x98,0x27, 0x01,0x01,0x01, 0x20,0x6E,0x28,
Read Outport     X00,0xFF,0xFF,0xFF,0xFF,0xF     0x2F,0x16,0x01,0x03,0x80,0x     0x12,0x48,0x4C,0x21,0x08,0x     0x01,0x01,0x01,0x01,0x01,0x0     0x55,0x00,0x76,0xF2,0x31,0x	FF,0xFF,0x00,0x32,0x8D,0 59,0x32,0x78,0x0A,0x0D,0 00,0x81,0x80,0x01,0x01,0 01,0x01,0x1D,0x00,0x72,0 00,0x00,0x1E,0x02,0x3A,0	x01,0x04,0x90,0 )xC9,0xA0,0x57 x01,0x01,0x01,0 x51,0xD0,0x1E, x80,0xD0,0x72,	0x01,0x03,0x6A, ,0x47,0x98,0x27, 0x01,0x01,0x01, 0x20,0x6E,0x28, 0x38,0x2D,0x40,
	FF,0xFF,0x00,0x32,0x8D,0 59,0x32,0x78,0x0A,0x0D,0 00,0x81,0x80,0x01,0x01,0x 01,0x01,0x1D,0x00,0x72,0 00,0x00,0x1E,0x02,0x3A,0 09,0x00,0x00,0x00,0x1E,0x	x01,0x04,0x90,0 0xC9,0xA0,0x57 x01,0x01,0x01,0 x51,0xD0,0x1E, x80,0xD0,0x72, x00,0x00,0x00,0	0x01,0x03,0x6A, ,0x47,0x98,0x27, 0x01,0x01,0x01, 0x20,0x6E,0x28, 0x38,0x2D,0x40, 0xFC,0x00,0x4C,

EDID editing is an advanced operation that involves a lot of professional skills and will not be described in detail here. Here we only explain several parts related to matrix operations, as shown below.

Out Port	Open	Save Analysis
In Port	Clear	Read Create
Operation		
Read Outport	Read Inport	Create And Load

- 1) Open: Open an existing EDID
- 2) Save: Save the generated EDID.
- 3) Analysis: The open EDID information is parsed and the parsed results are displayed in the right column.
- 4) Clear: Clear the EDID information shown below.

- 5) Read: Reading the EDID information of the matrix will display the read EDID information in the columns below. You can choose to read the EDID information of the matrix output port, or you can choose to read the EDID information of the input port.
- 6) Create: The edited EDID information is regenerated into a new EDID. After clicking the "Generate EDID" button, the interface will jump to the "EDID Operation" interface. You can choose to write the edited EDID information to the matrix on the EDID operator interface.

### 5.2 Update Code

Code DownLoad Data Adju	ustment
Tx Parameters Board Type	Memo10
Other 🔽	
Packet Length	
256	
Tx Interval	
1	
Open	
DownLoad	
Stop Tx	

Click the Update Code button, the display interface as shown below:

Update Code is also an advanced operation. This is usually done when upgrading the software version.

## 5.2.1 4\*4Matrix Upgrade

Note: It is only suitable for 4\*4 matrix of 1U standard chassis version. There are two kinds of program upgrade modes for this version matrix:

## 5.2.1.1 Serial Port Upgrade

Before upgrading, first select the serial port communication mode in the communication settings, the baud rate is 9600, and start communication.

 Click the "Open" button to find out where the program is stored, as shown in the following figure:

Tx Parameters	目初开				
Other	查找范围 α):	🔒 104x4		•	s 😁 🗊 -
	Ca	名称	^		修改日期
Packet Length	Rifinasta	BBack(25)	hex		2018-03-16 15:55
256	A	BootNet.h	ex		2018-03-22 13:48
Tx Interval	桌面				
1	100				
	) F				
Open	itmen				
DownLoad					
Downcoad	(1) 网络	•			
	10000	文件名(8):	88 ack (25). hex		💟 打开
Stop Tx		文件类型(7):	*. HZX		100 III

2. Select the program to be upgraded and click Open. The program upgrade interface is displayed as follows:

Tx Parameters	0040800F2
Board Type	000387700201D82000825820008278200089A
	000298200082B8200082D820008000000041
Other 💟	00000000000000000000000000000000000000
	000318200080000000338200083582000809
Packet Length	000953F0108810001087D310108CF07010833
256	00085BA00085907010841B5000845B5000870
230	00047B5000849B500084BB5000839AB000812
x Interval	0003BAB00083DAB00083FAB000841AB00083C
	00043AB000845AB0008DB89000837820008D5
1	0003782000837820008378200084DB5000893
	.0007F310108853101088331010881310108E0
	00089310108BD310108BF310108D7D5000859
	000D5D50008DBD50008D9D50008E11A01088C
	000E31A0108293B01088D3B0108F13B010827
Open	00043B50008CD0701083F3E0108C73101082C
	000CD310108CB310108C9310108DD89000803
	00023BC0008AD180108C1310108311B01086A
DownLoad	000253B0108273B0108C3310108C53101088F
Comicoad	00047AB000849AB00084BAB00084DAB00085B
	00000F002F800F062F80AA090E8000C824417
	0008344AAF10107DA4501D100F057F8AFF2F4
Stop Tx	000090EBAE80F0013F0010F18BFFB1A43F025
	00001031847780B0100980B01000A444FF0F7

3. Click on the download button and change the baud rate to 115200 in the communication settings.

Com Select	Rate Select
сомз 🔽	115200 🔽

When the baud rate is changed to 115200, the program starts upgrading. At the bottom of the display interface, you can see the total number of packets and the current number of packets. When the current number of packets matches the total number of packets, the upgrade is completed. As shown below:

		:10823000FEE7FEE7FEE7FEE704480549054A064B70 :10824000704700001D31010831810008387100209D :1082500038770020387300203873002053EA020C6E :1082600000F069802DE9F04B4FF00006002B1FBF96
Com Mode:Net : On	File: BBack.hex	Time Passed: 17 Total: 542,Current: 154

Com Mode:Net : On	File: BBack.hex	Time Passed: 17	Total: 542,Current: 542	
		:10 :10 :10	82200005480047FEL7FEL7FEL7FEL7FEL7FE 823000FEE7FEE7FEE7FEE704480549054 824000704700001D31010831810008387 82500038770020387300203873002053E 82600000F069802DE9F04B4FF00006002	A064B70 /100209D A020C6E

4. After the upgrade is complete, change the baud rate back to 9600 in the communication settings and keep the same with the baud rate of the matrix before continuing to control.

## 5.2.1.2 Network Port Upgrade

Before upgrading, first select the network communication mode in the network communication settings.

1.Click the "Open Data" button to find out where the program is stored, as shown in the following figure:

	Junetic				
Tx Parameters Board Type Other	13开 查找范围(α):	🎉 1V4x4		 s 💣 🗔 •	,
	C.	名称	^	修改日期	
Packet Length	最近正达了可的位	BBack(25).	hex	2018-03-1	6 15:55
256 V Tx Interval	查 桌面 库	BootNet.h	ex	2018-03-2	2 13:48
Open	ार्ड्स अंग्रहरू				
DownLoad	(1) 网络	<			(177)
		文件名 00:	88ack(25). hex		打开(0)
Stop Tx		文件类型(7):	*. HEX		R.W

2. Select the program to be upgraded and click Open. At this time, the program upgrade interface is displayed as follows:

Tx Parameters	0040800F2
Board Type	000387700201D82000825820008278200089A
	000298200082B8200082D820008000000041
Other	00000000000000000000000000000000000000
	000318200080000000338200083582000809
Packet Length	000953F0108810001087D310108CF07010833
256	00085BA00085907010841B5000845B5000870
200	00047B5000849B500084BB5000839AB000812
Tx Interval	0003BAB00083DAB00083FAB000841AB00083C
	00043AB000845AB0008DB89000837820008D5
1 Ven DownLoad Stop Tx	0003782000837820008378200084DB5000893
	.0007F310108853101088331010881310108E0
	00089310108BD310108BF310108D7D5000859
	000D5D50008DBD50008D9D50008E11A01088C
	000E31A0108293B01088D3B0108F13B010827
	00043B50008CD0701083F3E0108C73101082C
	000CD310108CB310108C9310108DD89000803
	00023BC0008AD180108C1310108311B01086A
	000253B0108273B0108C3310108C53101088F
	00047AB000849AB00084BAB00084DAB00085B
	00000F002F800F062F80AA090E8000C824417
	0008344AAF10107DA4501D100F057F8AFF2F4
	000090EBAE80F0013F0010F18BFFB1A43F025
	00001031847780B0100980B01000A444FF0F7

3. Click the download button and the program starts to upgrade.

At the bottom of the display interface, you can see the total number of packages and the current number of packages. When the current number of packages matches the total package, the upgrade is complete. As shown below:



## 5.2.28\*8 Matrix Upgrade

- 1. Change the baud rate to 9600 in the communication settings and start the serial port.
- 2. Click "Open" -→ "Download."
- 3. Change the baud rate back to 115200 in the communication settings and wait for the program update to complete.

## 5.2.3 16\*16 Matrix Upgrade

16\*16 Matrix Upgrade Mode One:

- 1. Panel upgrade:
  - a. In the communication setup, change the baud rate to 9600 (consistent with the baud rate of the matrix itself) and start the serial port.
  - b. Click "Open"  $\rightarrow$  "Download".
  - c. Back to the communication settings to change the baud rate back to 115200, waiting for the program to complete the update.
- 2. Backplane upgrade: Click "Open"  $\rightarrow$  "Download". Waiting for the program to complete the update
- Input board upgrade: Click "Open" → "Download" Waiting for the program to complete the update.
- Output board upgrade: Click "Open" →"Download" Waiting for the program to complete the update.

16\*16 Matrix Upgrade Mode Two:

- 1. Use the keypad in front of the matrix in combination with the display to change the baud rate of the matrix to 115200.
- 2. Change the baud rate to 115200 in the communication settings in

this software and start the serial port.

- Click "Open" →"Download". Waiting for the program to complete the update.
- 4. After all the modules that need to be updated have been updated, change the baud rate of the matrix back to 9600 by pressing the key.