# HDTVMT408140 User Manual



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.

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## Introduction:

The HDTVMT408140 4×8 Matrix routes four Hi-Def sources to any eight HDTV displays, supporting 1080p Full HD up to 4K plus all 3D formats, along with multichannel digital audio formats such as Dolby® True HD and DTS-HD® Master Audio™. Each source can be routed to any display using the front-panel push buttons, IR remote control, RS-232 interface, or via TCP/IP.

## Features:

- Supports resolutions up to 1080p@60HZ,48-bit deep color, 4k@30HZ
- 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
- Dolby TrueHD and DTS-HD master audio pass through HDMI output
- Advanced EDID management for rapid integration of sources and displays
- Multiple switching mode, push-in button, IR remote control, RS-232 control, and TCP/IP control
- Easy installation with rack-mounting ears
- Full 3D pass through.
- HDCP compliant

## **Panel Descriptions**

#### **Front Panel**



- 1. HDMI output selection button 1 to 8---Press to select the output from 1 to 6.
- 2. Source LED indicator---lit when selected by the output
- 3. IR receiver window----Receive the IR from the remote control of MT0408-140.

#### Back Panel



- 1. RJ45 ----TCP/IP control
- 2. RS232 port----Connect to this port for control from a computer
- 3. HDMI inputs 1 to 4----Connect HDMI sources
- 4. HDMI outputs 1 to 8---Output for displays, AVR etc.
- 5. IR extension receiver input ---- 3.5mm stereo phone-jack
- 6. Power port---Use included DC adaptor to power the matrix switcher.

**Remote control descriptions** 



## **Output and Input select**

- A. OUTPUT-X select INPUT-Y:
  - 1. Press OUTPUT-X (X means 1 to 8 of outputs)→Press INPUT-Y ( Y means 1 to 8 of inputs )
  - 2. Press OUTPUT-X (X means 1 to 8 of outputs)→ press the left and right arrow buttons to select the input.

B. 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

C. Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc): Press PTP button in Zone OUTPUT

## EDID Set Up

- A. Fixed EDID to INPUT-Y/ALL Press 1080I/1080P/3D/4K→Press 2.0CH/5.1CH/7.1CH→INPUT-Y/ALL button in Zone INPUT
- B. Copy EDID of OUTPUT-X to INPUT-Y/ALL
   Press COPY button→Press OUTPUT-X button→Press INPUT-Y/ALL button
- C. User defined EDID to INPUT-Y/ALL Press USER1/USER2 button→Press INPUT-Y/ALL

NOTE: Pressing button sequence should be finished in 5 seconds, otherwise, operation discarded.



## **Application Diagram**

## Specifications:

Bandw idth:	2.97Gbps per color				
Video Input Connectors:	4x HDMI Type A, 19-pin, female, locking				
Video Output Connectors:	8x HDMI Type A, 19-pin, female, locking				
RS-232 serial port:	DB-9, female				
TCP/IP Control:	RJ-45, female				
IR Input ports:	1x 3.5mm stereo jack				
Rack-Mountable:	1 U rack height, rack ears included				
Dimensions (W x H x D):	428mm x 245mm x 43mm , w ithout feet				
Shipping Weight	2.7kg				
Operating Temperature:	32°F to 104°F (0°C to 40°C)				
Storage Temperature :	-4°F to 140°F (-20°C to 60°C)				
Pow er Supply:	12V/5A DC				

## Package Contents:

- 1. 1x HDTVMT408140
- 2. 1x 12V DC power supply
- 3. 1x Remote control
- 4. 6x IR Transmitter,
- 5. 7x IR Receiver.
- 6. 1x mounting kit.
- 7. 1x CD for control software.

## **RS-232 Pin Assignment**

MT	0408 140	Remote Control			
	5406-140	Consol	е		
PIN	Assignment	PIN	Assignment		
1	NC	1	NC		
2	Тx	2	Rx		
3	Rx	3	Тх		
4	NC	4	NC		
5	GND	5	GND		
6	NC	6	NC		
7	NC	7	NC		
8	NC	8	NC		
9	NC	9	NC		

## **GUI Control**

PC System: Microsoft Windows Operation System

#### Installation

8x8 HDMI Matrix controller is a green software. You just need to copy "8x8 HDMI Matrix Controller vx.x.exe" to the PC which is used to control the Matrix by RS232 COM or TCP to complete installation.

### Preparation

- 1. Connect PC and Matrix by RS232 cable or UTP cable
- 2. Power up Matrix (It will take about 5 seconds to be ready with "Di" beep sound )
- 3. Double click "8x8 HDMI Matrix Controller vx.x.exe" icon to run it

### How to control Matrix

#### **Common information**

General	Port Tag	Setting	EDID control	IR Configuration	FW upgrade	
Conorta	0					

Click to select tab page

Connected: 192.168.1.121 Done		2013-05-03 10:17
	(3)	(4)
① COM port or TCP connect status		
2 Control command process status		
(3) Prompt message display area		
④ Date and Time display		
"General" page		
Control mode select	Device information	
© COM control mode	Device: HDMI Matrix, 8x	8
• TCP control mode	2 <sup>yer</sup> 9 <sup>8.22</sup>	
TCP control mode	Input1: Not connected	Output1: Not connected
	(3) Not connected	Output2: Not connected
[#1] - [Auto IP] - [192.168.1.121] - [18-98-66-85-2A-98	Inpa Connected	Output3: Not connected
4)earch Config	(5)nput4: Not connected	Output4: Not connected
	Input5: Not connected	Output5: Not connected
Connection	Inputo: Not connected	Output6: Not connected
Connect	6 Input /: Not connected	Output /: Not connected
	Inputs: Connected	Output8: Connected
Refresh device status		
Device status	(7)	
Display tags setting	]	
Display Input, Output tags when focus setting buttons	8	

- 1 Select control mode: RS232 COM mode (Auto COM ports detected) or TCP mode
- 2 List detected COM ports
- 3 List all Matrix devices after search operation
- ④ Click to search all Matrix devices that connected in same subnet
- 5 Click to configuration the selected Matrix's TCP control configurations
- (6) Click to connect or disconnect PC and Matrix ( Connection will be established automatically before control commands sending )
- $\bigcirc$  Click to refresh device status: include device information displayed in  $\bigcirc$  area and

Input/output port connection status in (10) area.

NOTE: Tab pages cannot be changed during control command is processing.

- (8) To enable or disable Input/output tags displaying when setting buttons on "Setting" page focused
- (9) Device information display area
- (10) Input/output port connection status

#### Set TCP control configuration

Click Config button to show TCP configuration window.

🐼 TCP configuration 🔰	<
Device information	
Device Tag	
2).uto IP © Static IP	
IP address	
<b>3</b> . <u>168</u> . <u>1</u> . <u>121</u>	
MAC	
<b>4</b> - 98 - 66 - 85 - 2A - 98	
5 OK 6 se	

- ① Set tag to identify Matrix device
- (2) Set IP mode: Subnet should support DHCP protocol when set Auto IP mode, then Matrix device will obtain IP automatically. Otherwise, set Static IP mode and designate a useable IP for Matrix device
- ③ Set IP address, not editable when Auto IP mode selected. Note: The last IP BYTE's range is 2-252.
- (4) Matrix device MAC address
- (5) Click OK to set configuration. If configuration is set OK, Matrix devices will be searched out again
- (6) Click to Close the window and configuration cancelled

#### "Port Tag" page

Input port tags		Output port tags	
Tag of Input1	Tag of Input5	Tag of Output1	Tag of Output5
Blue-ray DVD	Device5	Meeting room	Display5
Tag of Input2	Tag of Input6	Tag of Output2	Tag of Output6
Game player	Device6	Entertainment room	Display6
Tag of Input3	Tag of Input7	Tag of Output3	Tag of Output7
Set-top Box	Device7	VIP	Display7
Tag of Input4	Tag of Input8	Tag of Output4	Tag of Output8
PC	Device8	Office	Display8
	Edit 2		Edit 4

- 1 Input port tags
- 2 Click to edit Input port tags
- ③ Output port tags
- (4) Click to edit Output port tags

NOTE: Edit boxes are read only, click "Edit" button to pop up window to edit the tags.

One set of Input/output port tags can be set for Matrix device when COM control mode selected.

Input/output port tags can be set for respective Matrix device according to device's MAC address.

Edit Input port tags

After action of (2), edit form will pop-up as below:

Device name connect Input1		Device name connect Input5
Blue-ray DVD	• ×	Device5
Device name connect Input2		Device name connect Input6
Game player	• ×	Device6 🔹 👻
Device name connect Input3		Device name connect Input7
Set-top Box	• ×	Device7 💌 🗙
Device name connect Input4		Device name connect Input8
PC	▼ ×	Device8 🔹 🗙

Define tags for respective Input port, then devices connect the Input ports can be easily remembered.

Click buttons with "x" caption to delete tag which is no use any more, if tag is still used by any other Input port, delete action will be discarded.

Edit Output port tags

After action of (4), edit form will pop-up as below:

💞 Edit Output port tags	X
Output port tags	
Display name connect Output1	Display name connect Output5
Meeting room 💌 🗴	Display5
Display name connect Output2	Display name connect Output6
Entertainment room	Display6 💌 🗙
Display name connect Output3	Display name connect Output7
	Display7
Display name connect Output4	Display name connect Output8
Office 💌 🗙	Display8
	OK Cancel

Define tags for respective Output port, then displays connect the Output ports can be easily remembered.

Click buttons with "x" caption to delete tag which is no use any more, if tag is still used by any other Output port, delete action will be discarded.

#### "Setting" page

	Output2 1 2 3 4 5 6 7 8	Output3	Outp           3         4           7         8	2 3 4 6 7 8	Output5	Output6	Out; 3 4 1 7 8 5	2 3 4 6 7 8	Output8 1 2 3 4 5 6 7 8	
3 IF										
Name	Output1	Output2	Output3	Output4	Output5	Output6	Output7	Output8	T	
Name Setting1	Output1	Output2 2	Output3 3	Output4 4	Output5	Output6 6	Output7 7	Output8 8		
Name Setting1 Setting2	Output1 1 1	Output2 2 2	Output3 3 3	Output4 4 4	Output5 5 5	Output6 6 6	Output7 7 7	Output8 8 8		
Name Setting1 Setting2 Setting3	Output1 1 1 1	Output2 2 2 2	Output3 3 3 3	Output4 4 4 4	Output5 5 5 5	Output6 6 6 6	Output7 7 7 7 7	Output8 8 8 8		
Name Setting1 Setting2 Setting3 Setting4	Output1 1 1 1 1 1	Output2 2 2 2 2 2	Output3 3 3 3 3 3	Output4 4 4 4 4	Output5 5 5 5 5 5	Output6 6 6 6 6	Output7 7 7 7 7 7	Output8 8 8 8 8 8 8		
Name Setting1 Setting2 Setting3 Setting4 Setting5	Output1	Output2 2 2 2 2 2 2 2	Output3 3 3 3 3 3 3 3	Output4 4 4 4 4 4 4	Output5 5 5 5 5 5 5 5	Output6 6 6 6 6 6	Output7 7 7 7 7 7 7	Output8 8 8 8 8 8 8 8 8		
Name Setting1 Setting2 Setting3 Setting4 Setting5 Setting6	Output1	Output2 2 2 2 2 2 2 2 2 2	Output3 3 3 3 3 3 3 3 3 3	Output4 4 4 4 4 4 4 4 4	Output5 5 5 5 5 5 5 5 5 5	Output6 6 6 6 6 6 6 6 6	Output7 7 7 7 7 7 7 7 7	Output8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Edit	
Name Setting1 Setting2 Setting3 Setting4 Setting5 Setting6 Setting7	Output1	Output2 2 2 2 2 2 2 2 2 2 2 2 2 2	Output3 3 3 3 3 3 3 3 3 3 3 3	Output4 4 4 4 4 4 4 4 4 4 4	Output5 5 5 5 5 5 5 5 5 5 5	Output6 6 6 6 6 6 6 6 6 6 6	Output7 7 7 7 7 7 7 7 7 7 7	Output8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	6 Edit	

- 1 LED which displays Input number for respective Output port
- 2 Click to select Input port for respective Output port
- ③ Click to select previous or next Input port for respective Output port
- 4 Display Output from Input with tag information when mouse moves over 2 buttons
- 5 Pre-Setting items: Default is Port to Port
- 6 Click to edit selected pre-setting item
- $\bigcirc$  Set selected pre-setting item to Matrix

NOTE: When Change to this "Setting" page, software will try to refresh source selection status of Output port.

#### Pop-up tag messages

When "Display Input, Output tags when focus setting buttons" checkbox on "General" page is checked and Input/output port tag has been defined, tag messages will pop up like as:

Output 1	Output2	Output3		2 3 4 1	ut5 Output6	Outp 3 4 1	2 3 4	Output8
5678	5678	567	8 5	Output1 - [Me	eting room] tertainment room]	<u>'85</u>	678	5678
		A >     A		Output2 - [Eff Output3 - [VII	ertannitent roomj 2]	<u>ا</u> ا	< <b>&gt;</b>	
Output4 - [Offic	ce] from Inj	out2 - [Game	e player]	Output4 - [Off	ïce]			
Pre-Settings				Output5 - [Dis Output6 - [Dis	play5] splay6]			
Name	Output1	Output2	Output3	Output7 - Dis	play7]	Output7	Output8	
Setting1	1	2	3	Output8 - [Dis	play8]	7	8	
Setting2	1	2	3	Input1 - [Blue	ray DVD]	7	8	
Setting3	1	2	3	Input2 - [Gam	e player]	7	8	
Setting4	1	2	3	Input3 - [Set-t	op Box]	7	8	
Setting5	1	2	3	Input4 - [PC]		7	8	
Setting6	1	2	3	Input5 - Devi	ce51	7	8	Edit
Setting/	1	2	3	Input6 - Devi	ce6]	7	8	Set
Setting8	1	2	3	Input7 - Devi	ce71	7	8	<u></u>
				Input8 - [Devi	ce8]			

### Pop-up Menu

When mouse moves over 2 setting buttons, and click mouse right button, menu will pop up like as:

Output 1	Output2	Output3		ut4	Output5	Output6		out7	Output8
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	<u>    1  2</u> 5  6  ′	3 <u>4</u> 1 785	<u>A</u> ll Outputs	234 678	12 56	3 <u>4</u> 1 7 <u>8</u> 5	2 3 4 6 7 8	1 2 3 4 5 6 7 8
Output4 - [Offi	ce] from Inj	out2 - [Gam	►	2 Outputs 3 Outputs 4 Outputs 5 Outputs	◀▶			••	
Pre-Settings				<u>6</u> Outputs 7 Outputs					
Name	Output1	Output2	Output3	Port to Por	rt utput5	Output6	Output7	Output8	
Setting1	1	2	3	4	5	6	7	8	
Setting2	1	2	3	4	5	6	7	8	
Setting3	1	2	3	4	5	6	7	8	
Setting4	1	2	3	4	5	6	7	8	
Setting5	1	2	3	4	5	6	7	8	
Setting6	1	2	3	4	5	6	7	8	Edit
Setting7	1	2	3	4	5	6	7	8	
Setting8	1	2	3	4	5	6	7	8	<u>S</u> et

All Outputs: All Outputs from same Input

"1 Output" to "7 Outputs": Set current Output (where mouse right clicked) and the next x-1 ( x range is from 1 to 7, set total x Outputs at the same time ) Output(s) from same Input

Port to Port: Output1 from Input1, Output2 from Input2, Output3 from Input3, etc.

Edit selected pre-setting item

After action of 6, edit form will pop-up as below:

Setting name	All Outputs from
Out1 - [Meeting room] from	Out5 - [Display5] from
In1 - [Blue-ray DVD]	In2 - [Game player]
Out2 - [Entertaiment room] from	Out6 - [Display6] from
In3 - [Set-top Box]	In5 - [Device5]
Out3 - [VIP] from	Out7 - [Display7] from
In5 - [Device5]	In5 - [Device5]
Out4 - [Office] from	Out8 - [Display8] from
In4 - [PC]	In7 - [Device7]

- 1 Pre-Setting name
- 2 Set all Output ports from same Input
- ③ Select Input for respective Output

## "EDID control" page

EDID mode control	$\sim$	EDD contrast
Set EDID mode Select EDID to S	elect lapat 1 Set	
Copy EDED from Select Output	elect Input 2 Copy	10 <b>7</b> 20 <b>7</b> 30 40 50
EDID data control		60 20
Read EDID data from Select Output	3	80
Save to EDID file	4	A8 80 C9
Open EDID file	5	20 20 29
Download EDED data to Select Input	6 Download	

① Set EDID mode for selected Input port or All Input ports, click "Set" button to complete action.

NOTE: When set User1/User2 EDID mode, should Download EDID content to User1 Memory/User2 Memory first. User1/User2 default EDID content is 1080p, Stereo Audio 2.0.

- (2) Copy EDID from Output port to selected Input port or All Input ports, click "Copy" button to complete action.
- ③ Read EDID content from Output port and display in grid, click "Read" button to complete action.
- (4) Save EDID content which displayed in grid to binary file (file extension is ".bin")
- (5) Open EDID binary file and display in grid
- (6) Download EDID content which displayed in grid to selected Input port or All Input ports, click "Download" button to complete action. When User1 Memory/User2 Memory selected, download EDID content to respective memory then User1/User2 EDID mode can be set.
- (7) EDID content displaying grid

NOTE: EDID content displayed in grid is read only.

(8) Click to clear EDID content displayed in grid

#### "IR Configuration" page

IR control enable/disable setting

🗷 Enable IR control

To enable or disable IR control function. When box checked, IR control function enabled, otherwise, IR control function disabled. This setting is not memorized. IR control function is always enabled after power up.

"FW upgrade" page



- 1 Click to open firmware file (file extension is ".fw").
- 2 Firmware upgrade progress
- ③ Click the button to upgrade firmware.

NOTE: If failure occurs during upgrading firmware process, the following steps SHOULD be done sequentially to establish next upgrading procedure:

- 1. Power down the Matrix
- 2. Close the 8x8 HDMI Matrix Controller
- 3. Re-power up the Matrix, then wait for 10 seconds to ensure the Matrix is ready
- 4. Run 8x8 HDMI Matrix Controller, open firmware file and upgrade again
- (4) Firmware upgrading messages display
- (5) Click to clear the messages displayed in the memo box.