# 4K HDBaseT 4x4 Matrix, HDCP 2.2 compliant

## **Operating Instructions**



## **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.

## Features

- HDMI 2.0 version (Support HDMI2.0 4K50/60Hz YUV420).
- Support high definition resolutions 4K@60, 4K@30, 1080P, 1080i, 720P and standard video format.
- Transmit up to 70m under 1080p, 35m under 4K@30Hz.
- HDCP 2.2/1.4 compliant.
- 4 HDMI input ports, 4 HDBaseT output ports.
- Any one of the 4 sources to any one of the 4 Displays.
- With wide-band Bi-Direction IR routed control(38~56KHz)
  - IR extension from Sender to Receiver or from Receiver to Sender.
- Support Panel Button, IR Routing, RS232 Control, IP Control Via Telnet.
- POC (Receiver powered by HDBaseT Matrix).
- 1U rack design, easy installment.

#### Notice

Our company reserves the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

## ▲ Warning

#### To reduce the risk of fire, electric shock or product damage:



**1.** Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.



**6.** Clean this apparatus only with dry cloth.



 Do not install or place this unit in a bookcase, built-in cabinet or in another confined space.
 Ensure the unit is well ventilated.



**7.** Unplug this apparatus during lightning storms or when unused for long periods of time.



**3.** To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



**8.** Protect the power cord from being walked on or pinched particularly at plugs.



**4.** Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



 Only use attachments / accessories specified by the manufacturer.



**5.** Do not place sources of naked flames, such as lighted candles, on the unit.



**10.** Refer all servicing to qualified service personnel.

## TABLE OF CONTENTS

Package Contents Panel Descriptions Connecting and Operating Maintenance Product service Warranty

### **Package Contents**

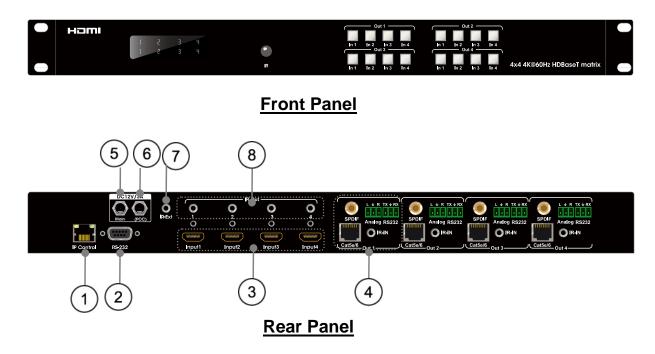
- ① Main unit. (HDBaseT Matrix).
- 2 12V3A DC Power Supply. x2
- ③ 1x Remote controller.
- ④ 1x IR Extension cable; 4x Wide-Band "IR In" cables; 4x "IR Out" cables.
- 5 Operating Instructions.
- 6 2x Mounting Ear.

## **Specifications**

opeemeations	
Operating Temperature Range	-5 to +35°C(-41 to +95 °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	3.0Gbit/s
Video Format Supported	4K@60/4k@30/1080P/1080i/720P/576P/480P/
Video Format Supported	576i/480i
HDCP Compliant	HDCP2.2 and HDCP1.4
Output Video	HDMI2.0 and HDMI 1.4 (over HDBaseT)
Audio Format Supported	DTS-HD、Dolby trueHD
Maximum Transmission Distance	1080P 70m, 4K 35m
Power Consumption	25wtts (Max.)
Dimensions	L440 x W166 x H42 mm
Mass (Main Unit)	2.0kg

**Note:** Specifications are subject to change without notice. Mass and dimensions are approximate.

## **Panel Descriptions**

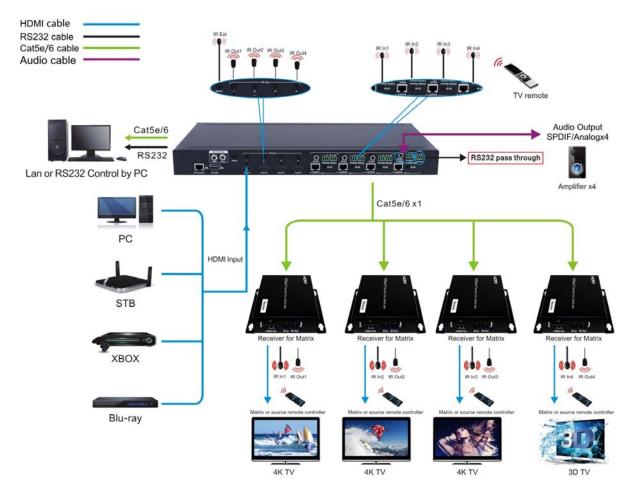


- ① Ethernet control.
- 2 RS232 for control.
- ③ HDMI input port.
- ④ Output port (HDBaseT output, IR in, RS232, analog audio L/R).
- 5 Main Power.
- 6 POC power input.
- ⑦ IR ext.
- 8 IR out.

## **Connecting and Operating**

- 1) Connect the HDMI input sources (such as HD-DVD, PS3, STB etc) into HDBaseT Matrix.
- 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 supply into HDBaseT Matrix and turn on the display you want to watch.
- 6) Use remote or push the button to choose input source.
- Attention: Insert / Extract cables gently.

## **Typical Application**



## Operation

#### 1. Front panel control.

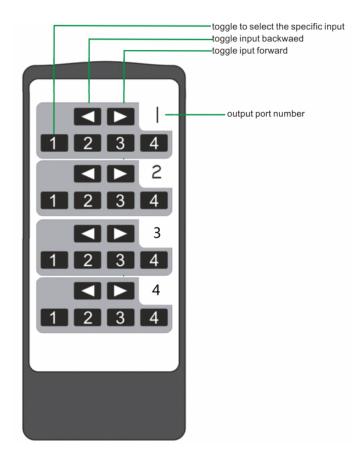
The front panel to select inputs to the various outputs.



#### Change source for output port:

Pressing input button of one of the output will change the output source to the selected input.

#### 2. Local IR remote control.



User can control the HDMI route of the matrix by using the IR remote. There are four group key pads for four output ports. For each output port source selection, there are 4 number keys and two arrow keys. Press number keys to select specific input port. Left arrow button to backward the input port, and right arrow to forward input port.

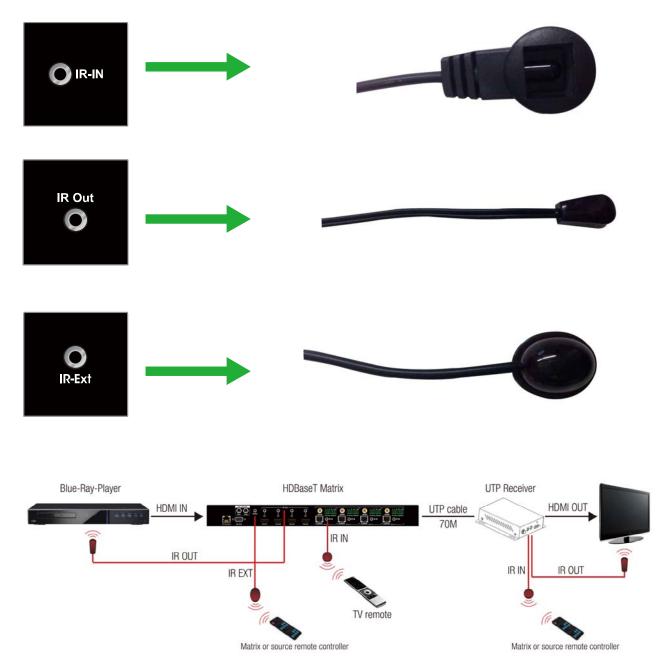
#### 3. IR extender control.



User can use the IR receiver cable to change the IR receiver position. If controlling the HDBaseT Matrix through the 1/8" (3.5 mm) input jack on the rear panel, connect the IR cable directly to the matrix rear IR receiver extension sockets.

#### 4. 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 from the sinks

Step1: Connect 4pcs "IR Out" cables to "IR Out" ports on the matrix, connect 4pcs "IR In" cables to the "IR In" ports on the receivers.

Step2: Affix the 4xIR emitter of "IR out" cables to the IR window of the 4xHDMI 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 from the sources

Step1: Connect 4pcs "IR Out" cables to "IR Out" ports on the receivers, connect 4pcs "IR In" cables to the "IR In" ports on the matrix.

Step2: Affix the 4xIR emitter of "IR out" cables to the IR window of the 4xHDMI Sink. Step3: Aim the remote of HDMI sink to related IR receiver of HDMI Matrix.

For example:

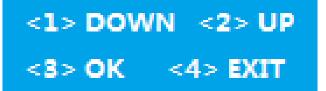
If you need control HDMI Sink1, then just aim the remote of HDMI Sink1 to the first "IR In" port of HDMI Matrix.

#### 3) Control the HDBaseT Matrix from the sinks

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

#### 5. Information shown on LCD panel

Pressing button in4 of output2 and in4 of output4 simultaneously for 3 seconds to enter EDID setting menu.



Note: The digital 1, 2, 3 or 4 are for in1, in2, in3 or in4 of out1

#### 5.1 EDID setting

EDID can be set via the EDID menu.

There are 12 sets of embedded EDID data, 4 set of user EDID. Or copy EDID from TV on one of the output port.

- 1: 1080P\_2CH(PCM) ---(see note2)
- 2: 1080P\_audio5.1
- 3: 1080P\_ audio7.1
- 4: 1080P\_3D\_2CH(PCM)

- 5: 1080P\_3D\_ audio5.1
- 6: 1080P\_3D\_ audio7.1
- 7: 4K30Hz\_3D\_2CH(PCM)
- 8: 4K30Hz\_3D\_ audio5.1
- 9: 4K30Hz\_3D\_ audio7.1
- 10: 4K60Hz(Y420)\_3D\_2CH(PCM)
- 11: 4K60Hz(Y420)\_3D\_ audio5.1
- 12: 4K60Hz(Y420)\_3D\_ audio71

USER EDID 1

USER EDID 2

USER EDID 3

User EDID can be set via RS232.

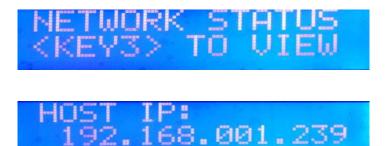
The EDID data read from one of output port will be saved to USER EDID1.



## 5.2 Check the "Version Status"



5.3 Check the "Network Status"



#### 6. Software Control

1). Connects a computer with HDBaseT Matrix by USB to RS232 cable, open the software and click Search Machine.

2). You can control HDBaseT Matrix as following picture showed:

HDMI Matrix 4x4 V1.0		
Close Port	Matrix Control   EDID Management   IP Setting	
Search Machine	Output1 © Ini C In2 C In3 C In4	
	Output2 C Ini © In2 C In3 C In4	
	Output3 C In1 C In2 © In3 C In4	
	Output4 C In1 C In2 C In3 © In4	

3). Set the EDID of 4 HDMI inputs:

HDMI Matrix 4x4 V1.0		
Close Port	Matrix Control EDID Management   IP Setting	
Search Machine	EDID: 1080P_3D_ audio5.1    Apply to Input1 EDID: 1080P_3D_ audio5.1    Apply to Input2 EDID: 1080P_3D_ audio5.1    Apply to Input3 EDID: 1080P_3D_ audio5.1    Apply to Input4	
	Load EDID file and write to EDID info(read from port):	
	Read EDID data and save to file	

#### 7. IP Control

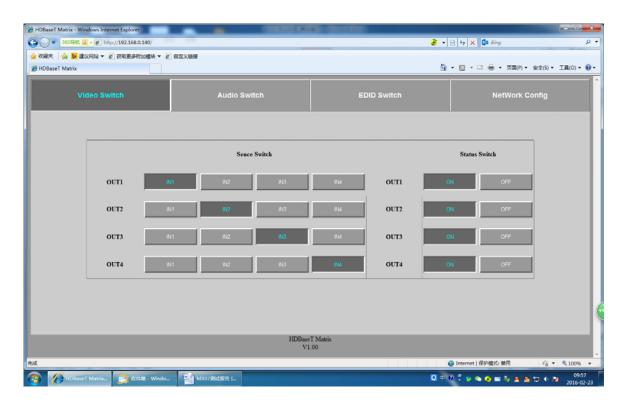
1). Click "DHCP", then the switch will assign IP address automatically. You can also set the IP address manually.

HDMI Matrix 4x4 V1.0		
Close Port	Matrix Control   EDID Management   IP Setting	
Search Machine	Image: Provide the setting           Host IP Address:         192         168         0         . 140           Net Mask:         255         . 255         . 0	
	Router IP Address:       192 . 168 . 0 . 1         MAC Address(hex):       60:89:B1:21:00:01         TCP Port:       0023	
	Save Setting	

2). If you set the static IP, you need set the IP of computer as below.

	ting Sł	naring					ed Wire
Int	ornet D	rotocol Version 4 (TCP/IP		ortion			2
			v4) Piope	enties			8
0	General	Alternate Configuration					
3		n get IP settings assigned au ability. Otherwise, you nee					
		appropriate IP settings.	a to dan y		- childre	Garmina	
		otain an IP address automat	tically				
		e the following IP address:	accan y				
	IP ac	ddress:	192	. 168	168	B . XX	ĺ.
	Subr	iet mask:	255	. 255	5 . 25	5.0	1
	Defa	ult gateway:		ф.	2	4	
	O	otain DNS server address au	utomatical	у			
	O Us	e the following DNS server	addresses	:			
	Prefe	erred DNS server:					
	Alter	nate DNS server:		•	•		
					3		nced

3). Open web browser, and enter the IP address you set.



## 4). Turn on/off the audio:

HDBaseT Matrix - Windows Internet Explorer		Contract Contract		
Co · 360₩ http://192.168.0.140/				- م
🚖 收藏夫 🛛 🍰 建议网站 👻 🙆 获取更多附加模块 👻 🙆 日	自定义链接			
C HDBaseT Matrix			🏠 🔹 🖾 👻 🖙 🖶 👻 页面(P) 👻 安全(S	5) • 工具(0) • 🚷 •
Video Switch	Audio Switch	EDID Switch	NetWork Conf	fig
	ουτι	OUT2		
	ON	ON		
	OUT3	OUT4		
	ON OFF	ON OFF		
		eT Matrix 1.00		
完成			😜 Internet   保护模式: 第用	a ▼ 🔍 100% 👻 🖉
🚱 😥 HDBaseT Matrix 🎅 02/448 - Windo	MX07歲就報告 [		0.00000000000000000000	09:57

#### 5). Set the EDID of 4 HDMI inputs:

🄏 HDBas	seT Matrix - Windows Inter	met Explorer		Concession of	tong Contract, in				
00	▼ 360导数 置 · @ http	p:// <b>192.168.0.140</b> /					<b>∂</b> •	🖹 😚 🗙 📑 Bing	• م
👷 収蔵5	朱 🛛 🏤 📴 建议网站 🔻 🧯	2)获取更多附加模块 🔻 🙆	自定义翻接						
HDB.	ase⊺ Matrix						<u>6</u>	• 🗟 • 🖾 🖶 • 👧	【(P) ▼ 安全(S) ▼ 工具(O) ▼ 😧 ▼
	Video Sw	ritch	Audio Si	witch		EDID Swite	ch	NetV	Vork Config
					T				
		IN1	Default EDID5	Apply		IN2 Def	fault EDID5	Apply	
		IN3	Default EDID5	Apply		IN4 Def	fault EDID5	Apply	
									-
					BaseT Matrix V1.00				
完成	<i>(</i> <b>5</b> )							● Internet   保护模式: 禁用	
1	HDBaseT Matrix	) 这样相 · Windo	MX07演話授告 [				0 <del>(</del> )	9 î 🔽 🔍 🐟 🥹 🖬 🌆 j	8 8 10 € 18 2016-02-23

## 6). Network config:

HDBaseT Matrix - Windows Internet Explorer		THE CONTRACT		
● ● 360号航 Ⅲ · @ http://192.168.0.140/				، م
🖢 牧藏夾 🛛 🎭 📴 建议网站 🔻 🙋 获取更多附加模块 👻 🧃	自定义领接			
CHDBaseT Matrix			💁 • 🖾 - 🍱 🖶 • 页面(P) • 安全(S)	- 工具(0) - 😧 -
Video Switch	Audio Switch	EDID Switch	NetWork Config	
	MAC Address	60:89:B1:21:00:01		
	Host IP Address	192.168.0.140		
	Subnet Mask	255.255.255.0		
	Router IP Address			
	TCP Port	23		
	DHCP Static IP	Apply		
		seT Matrix /1.00		
		1.00	O Internet   Ribilitat, STR	• • 100% •
🗿 💋 HDBaseT Matrix 📴 🕅 🚧 - Windo	. ● MX07期試經告 [		🔍 🖗 🕲 🖞 💗 🐟 🍲 🖬 💺 🙈 🖽 🖣	2016-02-21

#### 8. Telnet/RS232 Command Control

- 1). Open CommUart Assistant.
- 2). Comport setting:

Baud Rate:	57600 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit

9.		CommUart /	Assistant (V3.8.3)	- 6
COMSettings	COM port data receive			
PortNum COM6 -		*********System XEP************************************	**	8
BaudR 57600 -			-	
	= M203-ME-00 Systems infe	rnation System ID : 0003-00 F/F Version : 0.01	1	
Parity NONE -	E BH	: Help		
DataB 1	- 1577	Fever Off		
StopB 1 -	- YSFX	Fever On		
Sinho L	= KSTA	Show Global System Status		
Close	= NS 3BG EX/DIS	DEBUG Made Enable/Dinable	=	
- Ciuse	- VS 37	: Beset to Factory Defaults		
Recy Options	= Video Output Setup Comeands			
Receive to file		01-00] [EFERnalls, DISchlel] )	1	
Show timestamp	= WVS0[#1]1[#2]	Set Output mi to Videe Input m2	21 21	
		: Set All Dutput to Fideo Input v2		
T Receive as hex	<ul> <li>WS0 [x1]08/087</li> </ul>	Set Output al OB/077		
Receive pause	<ul> <li>#VS0 k08/077</li> </ul>	Set All Output OB/077		
Save Clear		- for out fails 11 areas 11 11	**	
		= [01-08], [EM=Enable, BIS=Disable]) : Enable/Disable Enternal Audio Output al		1
		Emable/Dimable All Esternal Andre Output at	2	
		(01-08), m3 = [01 - 12], m4 = [01 - 03])		
		Copy EB13 from Organ al to Input a2	÷	
		: Copy IBID from Ouput al to All Input		
		Copy ENDS from Default EDDS all to Input all Copy ENDS from Default EDDS all to All Input	5	
		Copy EDD from User[s4] EDD of Input[s2] to Input s2	-	
		Copy HEID from each Input's Uner[u4] HBID to each Input	-	
		: Copy HEID from Output[a1] to User[a4] HDID of Input a2	÷	
	= YEVIAU[a4]0[a1]	Cepy EDID from Output[a1] to User[a4] EDID of each Input	¥	
	= VEVI(x2)V(x4)L(x5)D(XX,)	Copy EBID Data[XI,] that the lenght is 25 to User[x4] EDID of		
	·	Input n2. The fermat of EDID Data is Max.	1	
	<pre>= WEWIAU[#4]L[#5]D[XX, ***]</pre>	: Copy HEID Data(XI, ) that the langht is uS to User[e4] HDID of	2	
		: each Input. The format of IDID Jata is Hez.		
	= Network Setup: ( mm=(000-255).	······a[0001"9999] )		
		Set DHCP ON/OFF	-	
	<ul> <li>NIPX may new year year</li> </ul>	Set Nost IF Address to max. was sum one		
Send Options	· VIFT mon. ann. ann. ann	Set Net Mank to som som mon men		
T Data from file		: Set Rowte IF Address to man Kan Kan axa		
Auto checksum	- XII? ::::	Set TCP/IP Port to rare		
Auto clear input	= Read Statum: ([D ml]=Default eds	A we for well-there every a la	-	
Send as hex		E Bend DEWE Link States		
C Send cyclic		Bead OWTPUT Link States		3
Interval 1000 ms	Derb			
	20mh			* Sand
Load Clear				Send

## 3). Enter Port Command in Send options.

4). If you need check the command, enter ">@ RH" and "enter" key, then click "Send".

RH	: Help
WSPF	: Power Off
WSPN	: Power On
RSTA	: Show Global System Status
WS DBG EN/DIS	: DEBUG Mode Enable/Disable
WS DF	: Reset to Factory Defaults
Video Output Setup Commands: (x1 = [01 - 08], x2 = WVSO[x1]I[x2] WVSOA[x2] WVSO[x1]ON/OFF WVSOAON/OFF	<pre>[01 -08] [EN=Enable, DIS=Disable] ) : Set Output x1 to Video Input x2 : Set All Output to Video Input x2 : Set Output x1 ON/OFF : Set All Output ON/OFF</pre>
Audio Output Setup Commands: (	x1 = [01-08], [EN=Enable, DIS=Disable])
WASO[x1]E EN/DIS	: Enable/Disable External Audio Output x1
WASOAE EN/DIS	: Enable/Disable All External Audio Output x1
EDID Setup: (x1 = [01-08], x2 WECO [x1]][x2] WECO [x1]A WECD [x3]I[x2] WECD [x3]A WECU [x4]A WECU [x4]A WEWI[x2]U[x4]O[x1] WEWIAU[x4]L[x5]D(XX,) WEWIAU[x4]L[x5]D(XX,)	<pre>= [01-08], x3 = [01 - 12], x4 = [01 - 03]) : Copy EDID from Ouput x1 to Input x2 : Copy EDID from Deput x1 to All Input : Copy EDID from Default EDID x3 to Input x2 : Copy EDID from Default EDID x3 to All Input : Copy EDID from User[x4] EDID of Input[x2] to Input x2 : Copy EDID from each Input's User[x4] EDID to each Input : Copy EDID from Output[x1] to User[x4] EDID of Input x2 : Copy EDID from Output[x1] to User[x4] EDID of Input x2 : Copy EDID from Output[x1] to User[x4] EDID of each Input : Copy EDID Data(XX,} that the lenght is x5 to User[x4] EDID of : Input x2. The format of EDID Data is Hex.</pre>
WIPH xxx. xxx. xxx. xxx WIPN xxx. xxx. xxx. xxx	zzzz=[0001 <sup>~9</sup> 999]) : Set DHCP ON/OFF : Set Host IP Address to xxx.xxx.xxx : Set Net Mask to xxx.xxx.xxx.xxx : Set Route IP Address to xxx.xxx.xxx.xxx : Set TCP/IP Port to zzzz
Read Status: ([D x1]=Default e	did x1 [0 x1]=OUT EDID x1 )
R8001	: Read INPUT Link States
R8002	: Read OUTPUT Link States
R8003	: Read OUTPUT HDCP States
R8004	: Read OUTPUT HDCP States
R8006	: Read OUTPUT ON/OFF States
R8007	: Read OUTPUT ON/OFF States
R8008	: Read OUTPUT and Audio Output Enable States
R8009	: Read INPUT EDID Set States
R8010[x1]	: Read INPUT x1 EDID Data
R8011[x1]	: Read OUTPUT x1 EDID Data
R8012	: Read Network States