WolfPack 4x4 HDMI2.0 Matrix Supports 4K@60hz YUV4:4:4 18Gbps





Thank you for purchasing this WolfPack product. For optimum performance andsafety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for futurereference.

## 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**

1. Features	.4
2. Package Contents	.4
3. Specifications	.4
4. Panel Descriptions	.5
5. Connecting and Operating	.6
6. Application Diagrams	.6
7. Remote Control Description	7
8. RS232 Pin Assignment	.7
9. RS232 Control 9.1 Software Control 9.2 Command Control	.8
10. Web Control	3  3  4
11. Online upgrading firmware1	17
Warranty Policy	18

### **Dear Customer**

Thank you for purchasing this WolfPack product. For optimum performance and safety, please readthese instructions carefully before connecting, operating or adjusting this product. Pleasekeep this manual for future reference.

### 1. Features

- HDMI 2.0 version (Support 4K@60Hz YUV4:4:4)
- Support 3D
- Bandwidth upto 18Gbps
- HDCP2.2 input ,HDCP2.2 output
- HDCP1.4 input, HDCP1.4 output
- Support HDR10
- 4xHDMI Input, 4xHDMI output with 4xSPDIF Audio
- Any one of the 4 Ultra HD sources to any one of the 4 Ultra HD displays
- Support Panel Button, Local IR, RS232 Control with command, IP Control, Web GUI Control
- Support Dolby True HD and DTS-HD master audio
- Unit size: L216XW105XH34mm

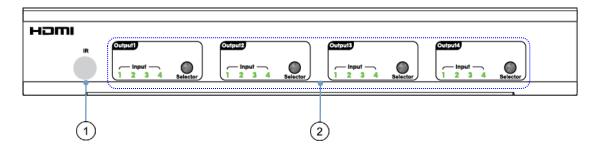
### 2. Package Contents

- 1). 1x HDMI Matrix
- 2). 1x 5V DC power supply
- 3). 1x Remote control
- 4). 1x IR Ext RX Cable
- 5). 1x Phoenix plugs for RS232 cable termination
- 6). 1x mounting kit
- 7). 1x CD for control software & user manual

### 3. Specifications

-4°F to 140°F (-20°C to 60°C)			
-40°F to 158°F (-40°C to 70°C)			
480p@60hz,576P@50hz,720P@60hz, 1080P@24hz,1080P@50hz,1080P@60hz,4K@24hz,4K@30hz, 4K@60hz YUV4:2:0, 4K@ 60hz YUV4:4:4			
4xHDMI Type A, 19-pin, female			
4xHDMI Type A, 19-pin, female			
3PIN terminal block connectors			
RJ45, female			
1x3.5mm stereo jack			
18 Gbps			
192.168.1.168			
Rack ears included			
L216XW105XH34mm			
0.72kg			
13W(Max)			

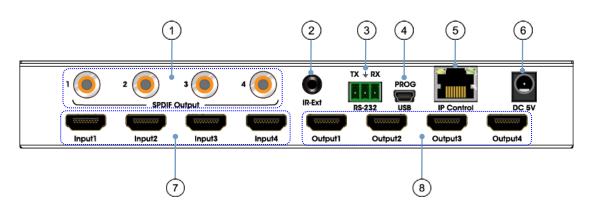
### 4. Panel Descriptions



① IR receive window.

(2) Output button OUT1~4: choose the desired output port from input ports 1~4.

- Note: 1) Turn on/off DHCP function: press the selector of output 1 and output 2 for 3 seconds.
  - 2) Restore factory settings: when all outputs select input 1, press the selector of output 3 and output 4 for 3 seconds.



- ① SPDIF Audio output.
- ② For IR external receiver cable.
- ③ RS232 for control or upgrading the firmware.
- ④ USB micro 5P port for upgrading the firmware.
- ⑤ IP control.
- 6 DC power input.
- ⑦ HDMI input port.
- 8 HDMI output port.

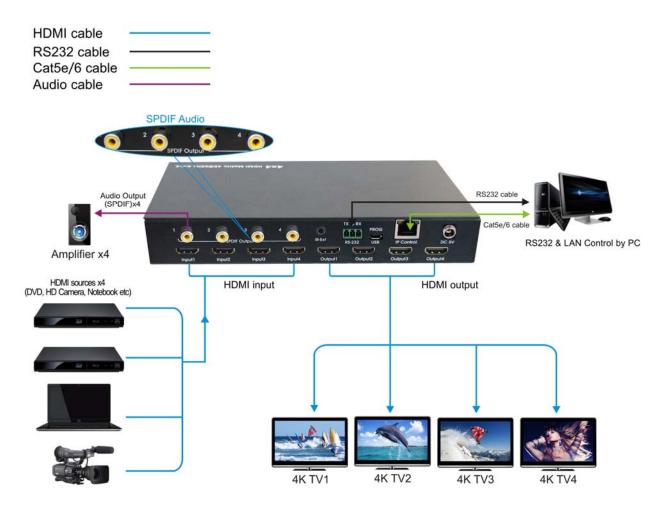
### 5. Connecting and Operating

- 1. Connect source devices to input ports of the matrix
- 2. Connect HDMI output ports to TV or other HDMI sink devices.
- 3. Optional: connect RS232 cable from PC RS232 port.
- 4. Optional: connect an Ethernet cable from the TCP/IP port on the matrix to a local area

network.

- 5. Connect 5V POWER supply to DC power socket.
- 6. Power on the matrix, HDMI sources and displays.

### 6. Application Diagram



### 7. Remote Control Description



① Standby Mode.

② OUTPUT-X select INPUT-Y: Press OUTPUT-X (X means 1 to 4 of outputs) Press INPUT-Y (Y means 1 to 4 of inputs)
③ All outputs select INPUT-Y: Press ALL button in zone OUTPUT Press INPUT-Y button (Y means 1 to 4 of inputs), then INPUT-Y switched to ALL OUTPUTS.
④ Cancel Button: Cancel the switching operation
⑤ PTP button: Mirror all inputs and outputs (Ex. Input 1 to output 1, input 2 to output 2, etc): Press PTP button in Zone OUTPUT.

8.	<b>RS232</b>	Pin	Assignment	
Υ.			/	

Matrix	Remote C	control Console
Assignment	PIN	Assignment
	1	NC
Tx	2	Rx
Rx	3	Тх
	4	NC
GND	5	GND
	6	NC
	7	NC
	8	NC
	9	NC

### 9. RS232 Control

#### 9.1 Software control



Connect the 4x4 Matrix to PC with a RS232 cable, open the software included in the manual. On the COM Setting session, select the COM port according to your PC and click Connect to get connected.

On this COM setting session, you can also change the Device name, Device name support up to 16 characters. Save or edit your status by clicking the Edit button.

Come to Port Set session to select or switch your input sources for each output, We can read the current status by clicking the "Status" button, or Clear our historical operating record by clicking "Clear" button. The right down blank shows the operating history.

HDMI 2.0 4*4 Matrix COM Setting Port: COM9 - Search Disconnect 1 Device Name [4*4HDMI2.0Matrix Get Edit	Port Set EDID Config IP Config Net Config System Cor Output 1 1 2 3 4 1 Output 2 1 2 3 4 2 Output 3 1 2 3 4 3 Output 4	Afig Status Clear Get All Ports Load All config data success! Set Input 2 to Output 2! Waiting Set success! Set Input 3 to Output 3! Waiting Set success! Set Input 4 to Output 4! Waiting Set success! Set Input 1 to Output 4! Waiting Set success!
	Output 4 1 2 3 4 4 Output All 1 2 3 4 1	4

Picture 1: Porting Setting

The EDID session helps us to Read and Configure EDID for each input, such as HDR, 3D, Data rates and Audio channel.

Search	EDID Mode:	4K2K@60Hz (YC4		Input HDMI 1	Read		Apply
Disconnect!	EDID MOUC.	1080P	વવ]				Арріу
	🗆 HDR 🔽	4K2K@30Hz 4K2K@60Hz (YC4		it	○ 7.1 CH	○ 5.1 CH	@ 2.0 CH
evice Name		4K2K@60Hz (YC4 Copy From TV1	44)	41 2	2		
*4HDMI2.OMatrix	EDID Mode:	Copy From TV2 Copy From TV3 Copy From TV4			Read		Apply
Get	T HDR 🔽	3D 🗆 30Bit	🗆 36Bit	☐ 48Bit	○ 7.1 CH	⊂ 5.1 CH	@ 2.0 CH
Edit			Set	Input HDMI 3	]		
	EDID Mode:	4K2K@60Hz (YC4	20)	•	Read		Apply
	E HDR E	3D 🗆 30Bit	☐ 36Bit	□ 48Bit	○ 7.1 CH	⊂ 5.1 CH	@ 2.0 CH
			Set	Input HDMI 4	1		
	EDID Mode:	4K2K@60Hz (YC4	20)	•	Read		Apply
	🗆 HDR 🔽	3D 🗆 30Bit	🗆 36Bit	☐ 48Bit	C 7.1 CH	C 5.1 CH	@ 2.0 CH

Picture 2: EDID Setting

The IP configure session helps to read and configure the IP address and MAC of the Matrix. Click DHCP if you want the router assign an automatic IP for the Matrix.

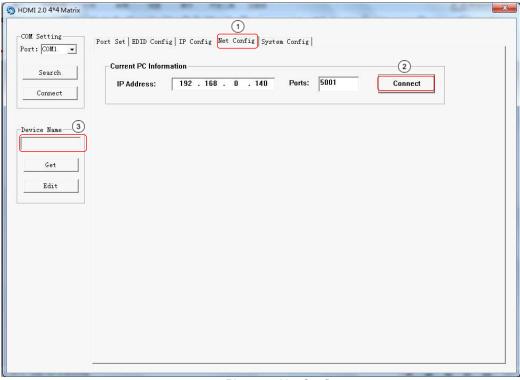
Disconnect I         Host IP Address:         192         168         1         168           Net Mask:         255         255         0 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>□ IP Address Setting</th> <th>Search</th>								□ IP Address Setting	Search
levice Name		168	1.		168	÷	192		Disconnect!
		0	255 .		255		255	Net Mask:	louizo Nono
Router IP Address: 132 . 100 . 1 . 0		0	1.	-	168		192	Router IP Address:	*4HDMI2.0Matrix
Get									Get

Picture 3: IP Config

X

The Net Config session allows us to configure the PC and Matrix in the same LAN with the IP Address and connection.

Click "Net config"  $\rightarrow$  "Connect"  $\rightarrow$  "Search Device"  $\rightarrow$  "Sel Device Number"  $\rightarrow$  "Connect" then you can see the device name, it meas connect successfully.



#### Picture 4: Net Config

You can also click "IE", easy and click to enter into web.

Search	Current PC Information       IP Address:     192     . 168     . 0     . 140     Ports:     5001     Disconnect
vice Name	Host Device Information IP Address: 192 , 168 , 0 , 173 Connect Search Device
Get	1->IP=192.168.0.173 Name=4*4HDMI2.0Matri 5 Sel Device Number: 1
	Reset

Picture 5: Net Config

The last session is System Config, which allows power ON/OFF or reset, default the Matrix.

ort: COM9 🖵	1	Config   Net Config [			
Search Disconnect!	Command:			Apply	
Discolator:		Bau	er Ctrl		
evice Name *4HDMI2.0Matrix	Reset	On	OFF		
Get	Default				

Picture 6: System config

#### 9.2 Command Control

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

Baud Rate:	115200 bps
Parity:	None
Data Bits:	8 bit
Stop Bits:	1 bit

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

	CommUart Assistant	→ - □ ×
COM Settings	Data receive	SAVAGE V4.2.0
PortNum COM9 BaudR 115200 DPaity NONE DataB 8 StopB 1 Close	Data receive         MtP@W05000203010203020203030203342 a3448444d49322 a304d6174726978         MtP@W0901#         MtP@W0901#	3# 5# 8#
Recv Options Receive to file Auto linefeed Show timestamp Receive as hex Pause receive <u>Save</u> <u>Clear</u>		
Send Options Data from file Auto checksum Auto clear input Send as hex Period 1000 ms Load Clear	1.DCD	8.CTS
💣 COM Settings	Send: 67 Recv: 181	6 Reset

Picture 7

4). Command		
Command	Function	Note
@W 04 00 04 00 02 #	DTD Eurotien	Mirror all inputs and outputs
@W 04 00 01 02 03 #	PTP Function	(Ex. Input 1 to output 1, input 2 to output 2, etc)
@W 50 #	Reboot	
@W 51 #	Restore Factory Setting	
	Standby	00: Standby Mode
@W 0F 00 #	Standby	01: Cancel "Standby Mode"

#### 5). Select HDMI input for HDMI output

Command	Description
00	Output1
01	Output2
02	Output3
03	Output4
04	All Output
00	Input1
01	Input2
02	Input3
03	Input4

E.g: @W 00 00 #: Output 1 display Input1

Output 1

- Input1

- - -

## 6). EDID Setting

@W XX AA BB #:

Parameter Description:

### XX for configuration of "INPUT EDID"

Command	05	06	07	08
Description	Input1	Input2	Input3	Input4

### AA for selecting "Video Mode"

Command	00	01	02	03
Description	1080P	4K2K_30	4K2K_60(YC420)	4K2K_60(YC444)

**BB** for selecting below function

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
HDR	48Bit	36Bit	30Bit	7.1CH	5.1CH	2CH	3D
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0

"1" : choose the function, "0" : doesn't choose the function.

E.g: 11001001: HDR, 48Bit, 7.1CH, 3D

Chang Binary code "11001001" to hexadecimal format "C9".

### E.g: @W 05 03 C9 #

The EDID of input 1 is:  $4K2K_{60}(YC444)$ , HDR, 48Bit, 7.1CH, 3D.

### 10. Web Control

#### 10.1 Static IP Address.

The default IP Address of HDMI Matrix is 192.168.1.168.

#### 10.1.1 Change the IP address of your PC.

- 1). Connect the HDMI Matrix and PC to the LAN.
- 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). Connect to the device and click change settings of this connection:

📮 Local Area Connection Properties 🗧 🗧	×
Networking Sharing	
Connect using:	
Intel(R) 82579V Gigabit Network Connection	
Configure	
This connection uses the following items:	
Client for Microsoft Networks  Client for Microsoft Network Monitor 3 Driver  Client Gas Packet Scheduler  Client Brinter Sharing for Microsoft Networks  Althemet Protocol Version 6 (TCP/IPv6)  Althemet Protocol Version 4 (TCP/IPv4)  Althemet Pr	
Install Uninstall Properties	
Description TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.	
Calica	

Picture 8

- 4). Highlight Internet Protocol Version 4 (TCP/IPv4) by clicking on the item.
- 5). Click Properties.

General	Alternate Configuration				
this cap	n get IP settings assigned aut bability. Otherwise, you need appropriate IP settings.				
<ul> <li>O</li> </ul>	otain an IP address automatic	ally			
O Us	e the following IF address:				
IP ad	ddress:		-		
Subr	iet mask:	247	4	25	
Defa	ult gateway:		+	+	
@ 0l	otain DNS server address aut	cmatically			
() Us	e the following DNS server a	ddresses:			
Prefi	erred DNS server:				
Alter	nate DNS server:	( in 1	÷.		
E v	alidate settings upon exit			Adva	nced

Picture 9

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 192.168.1.2 to 192.168.1.254 (excluding 192.168.1.168).

Eeneral	
	automatically if your network supports seed to ask your network administrator
🔘 Obtain an IP address autom	atically
• Use the following IF address	51
IP address:	192.168.1.2
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	1
Obtain DNS server address	automatically
OB the following DNS server	
Preferred DNS server:	· · ·
Alternate DNS server:	
Validate settings upon exit	Advanced

Picture 10

7). Click **OK**.

8). Click Close.

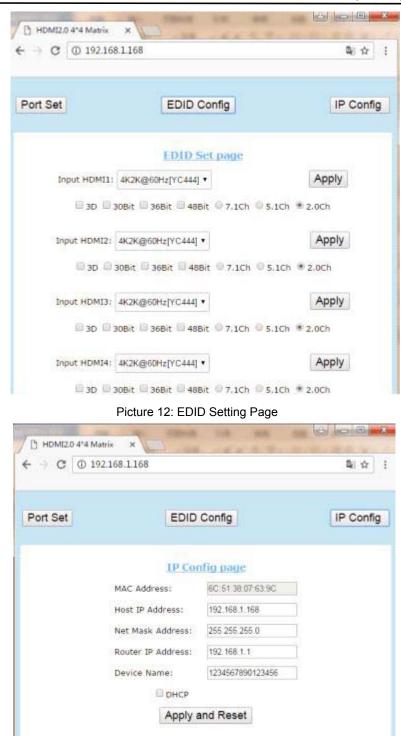
#### 10.1.2 Open the web browser and control the matrix.

1). Open the Web browser and enter the IP address of the HDMI Matrix:192.168.1.168, then you can set the function as below pictures:

· -> C 0 1	92.168.1.168				■ ☆
Port Set		EDID	Config		IP Config
		Port S	Set page		
Outpu	1: Input 1	Input 2	Input 3	Input 4	4
Output	2: Input 1	Input 2	Input 3	Input 4	4
Output	3: Input 1	Input 2	Input 3	Input 4	4
Output	4: Input 1	Input 2	Input 3	Input 4	4
Output	Input 1	Input 2	Input 3	Input 4	1

Picture 11: Port Setting Page

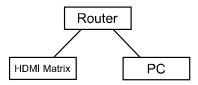
#### **Operating Instruction**



Picture 13: IP Configuration Page

#### 10.2 DHCP

You can also choose "DHCP" for HDMI Matrix (refer to 9.1 picture3) 1). Connect the HDMI Matrix and PC to the LAN.



2). Open the PC tool (included in the CD).

PC tool
 2017-01-16 17:47 成

3). Search the IP address of HDMI Matrix, please refer to 9.1 picture 4 & picture 5.

4). Open the web browser and enter the IP address you searched, then you can set the function as below pictures:

→ C ① 192.					<b>₽</b> ☆
Port Set		EDID	Config		IP Confi
		Port 5	Set page		
Output1:	Input 1	Input 2	Input 3	Input 4	4
Output2:	Input 1	Input 2	Input 3	Input 4	4
Output3:	nput 1	Input 2	Input 3	Input 4	4
Output4:	Input 1	Input 2	Input 3	Input 4	4
Output All:	Input 1	Input 2	Input 3	Input 4	1

Picture 14: Port Setting Page

→ C ① 192.168	0.20	Bi ☆
ort Set	EDID Config	IP Con
	EDID Set page	
Input HDMI1:	4K2K@60Hz[YC444] •	Apply
🗎 3D 🗐 3	DBit 🗍 36Bit 🗐 48Bit 🌑 7.1C	ch ◎ 5.1Ch 🖲 2.0Ch
Input HDMI2:	4K2K@60Hz[YC444] •	Apply
🖻 3D 🗐 3	0Bit 🔲 3 <mark>6Bit 🗐 48</mark> Bit 🔍 7,10	ch © 5.1Ch இ 2.0Ch
Input HDMI3:	4K2K@60Hz[YC444] •	Apply
🛙 3D 🗐 3	DBit 🗍 36Bit 🗐 48Bit 🍈 7.10	ch ◎ 5.1Ch 🛎 2.0Ch
Input HDMI4:	4K2K@60Hz[YC444] •	Apply
© 3D ₪ 3	08it 368it 488it 97.10	h 0 5 1ch # 2 0Ch

Picture 15: EDID Setting Page

### **Operating Instruction**

€ → C 0	192.168.0.20		単 ☆
Port Set	EDID	Config	IP Confi
	IP Cor	ifig page	
	MAC Address:	6C 51 38 07 63 9C	
	Host IP Address:	192, 168, 0, 20	
	Net Mask Address:	255 255 255 0	
	Router IP Address:	192.168.0.1	
	Device Name:	1234567890123456	
	DHCP		

Picture 16: IP Configuration Page

### 11. Online upgrading firmware.



1). Connect the HDMI Matrix with PC via USB or RS232 port.

2). Open the software to upgrade firmware (Included in the manual).

3). Click "Search" choose the port, then click "connect", then you can see "S3R(C)", click "Load FW File" to upload the firmware, click "update", the firmware can be upgraded in one minute.

JPDATE_FW	0	SOP.	5-0-05-		10	
Uart config	2		3			
Ľ	COM9 -	Search	Disconnect!			
S3RLC			Reset			
			8 <del></del> 2.			
	<i>"</i>					Load FW File
D:\upgradır	ng firmware\MUX	_ALL_HDMI20(1).hex				Load FW File
						Update
[				10. <b>4</b>	*	
					-	Clear
4					F	

Picture 17:Upgrading firmware

### 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.

#### 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

18

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.