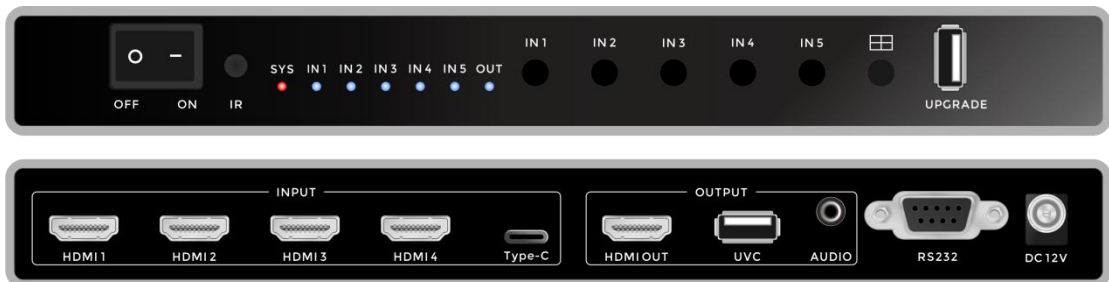


HDTVVPX5014K60

WolfPack 4K 60 Hz 5x1 Multiviewer



Important Safety Information

1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Do not use this product near water. Keep away from wet places, such as: spas, pools, sinks, laundries, wet basements, etc.
4. When cleaning, unplug the switcher and wipe with a dry cloth. Do not use damp cloths, cleaning fluids, or aerosols which may result in electric shock, fire, or switcher damage.
5. Operate this product using only the included power supply and/or power cable. Use of an unapproved power implement may impair performance, damage the product, or cause fires.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.
9. Only use attachments/accessories specified by BC to avoid fire, shock, or other hazards.
10. To reduce the risk of electric shock and/or damage to this product, never handle or touch this switcher or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
11. Unplug this product during lightning storms or when unused for long periods of time.
12. Never open, remove switcher panels, or make any adjustments not described in this manual. Attempting to do so could result in electric shock, damage to the switcher, or other hazards.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO REDUCT THE RISK OF ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE
TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS
INSIDE REFER SERVICING TO
QUALIFIED SERVICE PERSONNEL.

Content

1. Introduction	4
2. Feature	4
3. Specification	4
4. Panel	错误! 未定义书签。
5. Connect diagram	6
6. Modes	6
7. Remote controller	6
8. Central Control Commands	7
9. After sales	11

1. Introduction

This product is a real WolfPack 4K 60 Hz 5x1 Multiviewer with seamless switching (*when in single-window mode) and scaling functions, it supports four 4K60 and 1 Type-C inputs and 1 HDMI2.0 output with 3.5mm audio out and USB2.0 capture. The resolution of both inputs and output can up to 4K@60hz 4:4:4, the bandwidth can up to 18Gbps. Users can use the front panel push buttons, IR remote control, and RS232 codes to control the unit.

2. Feature

- Support 8 working modes/layouts
- Support V2.0, and the resolution up to 3840*2160@60Hz
- Support USB2.0 port for OBS Capture
- Support 4K60 inputs(4*4K60, 1*USB-C)
- Support seamless switching even when different resolutions inputs
- Support the front panel push-button, IR remote and the RS232 control
- Support USB-A upgrading
-

3. Specification

Video	
Input port	4* HDMI2.0, 1*USB-C
Input resolution	<ul style="list-style-type: none"> • HDMI2.0: 640x480⁸, 800x600⁸, 1024x768⁸, 1280x768⁸, 1280x800⁸, 1280x1024⁸, 1360x768⁸, 1366x768⁸, 1440x900⁸, 1400x1050⁸, 1600x1200⁸, 1680x1050⁸, 1920x1200⁸, 720x480⁸ (480p), 720x576⁶ (576p), 1280x720⁵ (720p30), 1280x720⁶ (720p50), 1280x720⁸ (720p60), 1920x1080² (1080p24), 1920x1080³ (1080p25), 1920x1080⁵ (1080p30), 1920x1080⁶ (1080p50), 1920x1080⁸ (1080p60), 3840x2160⁵(2160p30),3840x2160⁶ (2160p50), 3840x2160⁸ (2160p60) • USB-C: 640x480⁸, 800x600⁸, 1024x768⁸, 1280x768⁸, 1280x800⁸, 1280x1024⁸, 1360x768⁸, 1366x768⁸, 1440x900⁸, 1400x1050⁸, 1600x1200⁸, 1680x1050⁸, 1920x1200⁸, 720x480⁸ (480p), 720x576⁶ (576p), 1280x720⁵ (720p30), 1280x720⁶ (720p50), 1280x720⁸ (720p60), 1920x1080² (1080p24), 1920x1080³ (1080p25), 1920x1080⁵ (1080p30), 1920x1080⁶ (1080p50), 1920x1080⁸ (1080p60), 3840x2160⁵(2160p30) <p>1 = 23.98 Hz, 2 = 24 Hz, 3 = 25 Hz, 4 = 29.97 Hz, 5 = 30 Hz, 6 = 50 Hz, 7 = 59.94 Hz, 8 = 60 Hz, 9 = 75 Hz</p>
Output port	1* HDMI2.0
Output resolution	<p>HDMI2.0: 1920x1080⁶ (1080p50), 1920x1080⁸ (1080p60), 3840x2160⁵ (2160p30) , 3840x2160⁶ (2160p50) , 3840x2160⁸ (2160p60)</p> <p>UVC(USB2.0): 1920x1080⁶ (1080p50), 1920x1080⁸ (1080p60)</p> <p>1 = 23.98 Hz, 2 = 24 Hz, 3 = 25 Hz, 4 = 29.97 Hz, 5 = 30 Hz, 6 = 50 Hz, 7 = 59.94 Hz, 8 = 60 Hz, 9 = 75 Hz</p>
Audio	
Input port	4x HDMI, 1*USB-C
Input audio signal	RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0
Output port	1* HDMI2.0, 1* Analog Audio(3.5mm audio), 1*USB2.0
Output audio signal	RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0

Video Control		
Front control	IN1: Input 1 IN2: Input 2 IN3: Input 3 IN4: Input 4 IN5: Input 5	Single-view mode
	田: Default input 1 to input 4	Quad-view mode
IR	All the functions of the button can be realized through the remote control, and it also supports fast switching.	
RJ45	DB9, serial port control	
Others		
Operating temperature	0 to +45 C (32 to + 113 F)	
Storage temperature	-20 to +70 C (-4 to + 158 F)	
Humidity	10% to 90%	
Static Protection	Human body discharge mode: ± 8kV (air gap discharge)/ ± 4kV (contact discharge)	
Power adapter	DC 12 V 1.5 A	
Power consumption	10W(Max)	
Product size(mm)	240*124*28	
Net Weight	2kg	

4. Panels



OFF/ON: For power ON/OFF switch

IR: Remote control receiver

SYS: for the power and system indicator

IN1/2/3/4/5: These green LED illuminate when the device is connected to the input source

OUT: for the HDMI output cable connection indicator

IN1/IN2/IN3/IN4/IN5: push buttons for the 5 inputs selection to be one full screen



: this push button for a quick quad-view mode

UPGRADE: for the USB-A firmware upgrading(upgrading steps will be provided by video when needed)



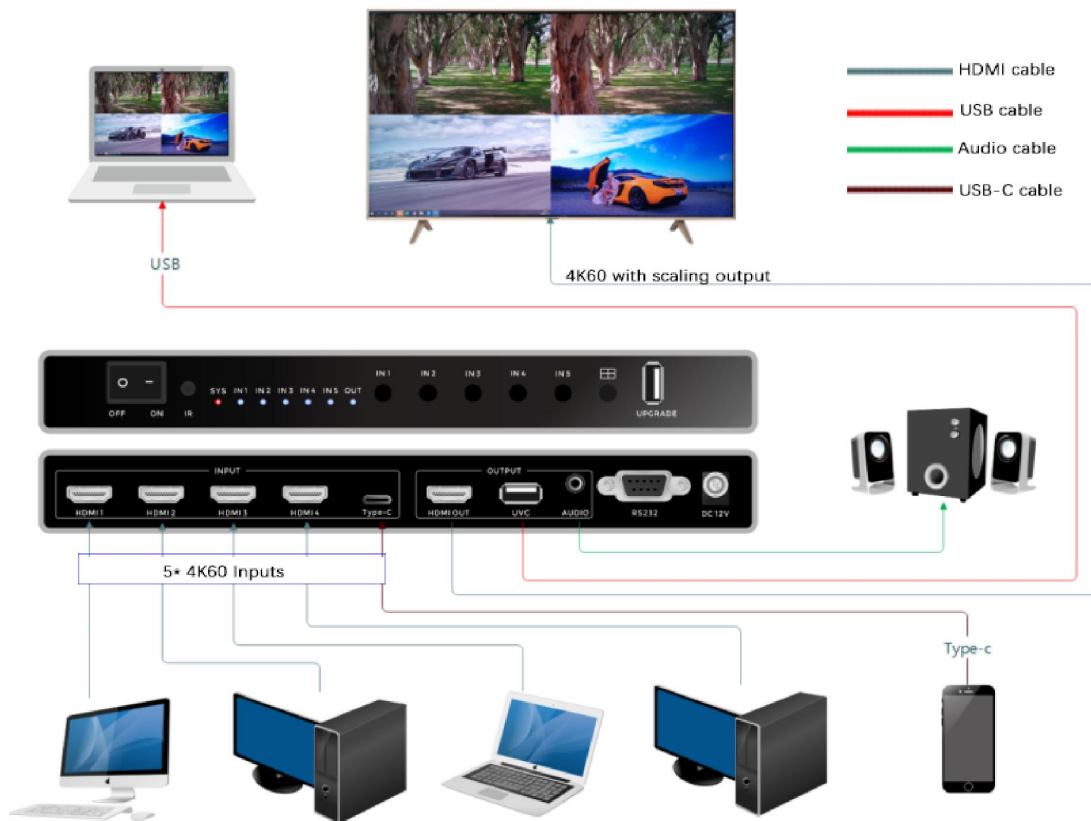
INPUT: Input ports, all 4 HDMI can support 4K60 inputs, Type-C is for 4K30

OUTPUT: HDMI output up to 4K60 with scaling, UVC is a USB2.0 capture port; AUDIO out for the de-embedded

RS232: supports the RS232 commands control

DC12V: DC12V power adapter

5. Diagram



6. Working Modes



7. IR Remote control

Reset to factory: WIN+LOAD+SAVE

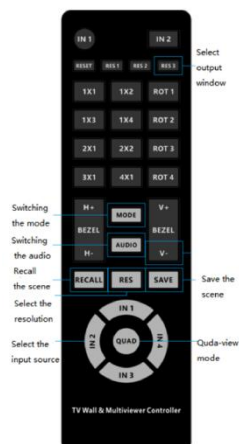
*press all 3 buttons 3 times

Front button Lock: WIN+LOAD

*press all 2 buttons 3 times

Front button Unlock: WIN+LOAD

*press all 2 buttons 3 times



8. RS232 Control Commands

RS232 cable with straight-through connection

Communication protocol:

Baud rate: 115200

Data bit: 8

Stop bit: 1

Check bit: None

All control instructions are sent in hexadecimal mode or the ASCII format, below are showing as HEX format.

Factory Reset:

```
EB 90 00 12 00 ff 21 00 00 00 00 00 00 00 00 00 00
```

Resolutions:

```
EB 90 00 12 00 ff 23 00 00 00 00 00 00 00 00 00 00 //1920x1080@60
EB 90 00 12 00 ff 23 01 00 00 00 00 00 00 00 00 00 //1920x1080@50
EB 90 00 12 00 ff 23 02 00 00 00 00 00 00 00 00 00 //1920x1200@60
EB 90 00 12 00 ff 23 03 00 00 00 00 00 00 00 00 00 //1360x768@60
EB 90 00 12 00 ff 23 04 00 00 00 00 00 00 00 00 00 //1280x720x60
EB 90 00 12 00 ff 23 05 00 00 00 00 00 00 00 00 00 //1024x768x60
EB 90 00 1200 ff 23 06 00 00 00 00 00 00 00 00 00 //2560X1600x60
EB 90 00 12 00 ff 23 07 00 00 00 00 00 00 00 00 00 //2560X1600x50
EB 90 00 12 00 ff 23 08 00 00 00 00 00 00 00 00 00 //3840x2160x60
EB 90 00 12 00 ff 23 09 00 00 00 00 00 00 00 00 00 //3840x2160x50
EB 90 00 12 00 ff 23 0A 00 00 00 00 00 00 00 00 00 //3840x2160x30
EB 90 00 12 00 ff 23 0B 00 00 00 00 00 00 00 00 00 //3840x2160x25
EB 90 00 12 00 ff 23 0C 00 00 00 00 00 00 00 00 00 //3840x2160x24
EB 90 00 12 00 ff 23 0D 00 00 00 00 00 00 00 00 00 //4096x2160@60
EB 90 00 12 00 ff 23 0E 00 00 00 00 00 00 00 00 00 //4096x2160@30
EB 90 00 12 00 ff 23 0F 00 00 00 00 00 00 00 00 00 //720x480@60
EB 90 00 12 00 ff 23 10 00 00 00 00 00 00 00 00 00 //720x576@50
EB 90 00 12 00 ff 23 11 00 00 00 00 00 00 00 00 00 //2560x1080@60
EB 90 00 12 00 ff 23 12 00 00 00 00 00 00 00 00 00 //2560x1440@60
EB 90 00 12 00 ff 23 FF 10 00 05 90 3C 00 00 00 00 00 //4096X1424@60
```

Resolution Customizing:

```
EB 90 00 12 00 ff 23 FF 00 00 00 00 00 00 00 00 00 00
```

Red is for the Width, Blue is for the Height, Yellow is for the frame rate

Eg, resolution 1920X1080@60

```
EB 90 00 12 00 ff 23 FF 07 80 04 38 3C 00 00 00 00 00 //1920X1080@60
```

Or resolution 2000 X 1000@60

```
EB 90 00 12 00 ff 23 FF 07 D0 03 E8 3C 00 00 00 00 00 //2000x1000@60
```

Scenes Recall:

Scene 1: EB 90 00 12 00 ff 2E 00 00 00 00 00 00 00 00 00 00
Scene 2: EB 90 00 12 00 ff 2E 01 00 00 00 00 00 00 00 00 00
Scene 3: EB 90 00 12 00 ff 2E 02 00 00 00 00 00 00 00 00 00
Scene4: EB 90 00 12 00 ff 2E 03 00 00 00 00 00 00 00 00 00
Scene 5: EB 90 00 12 00 ff 2E 04 00 00 00 00 00 00 00 00 00
Scene 6: EB 90 00 12 00 ff 2E 05 00 00 00 00 00 00 00 00 00
Scene 7: EB 90 00 12 00 ff 2E 06 00 00 00 00 00 00 00 00 00
Scene 8: EB 90 00 12 00 ff 2E 07 00 00 00 00 00 00 00 00 00
Scene 9: EB 90 00 12 00 ff 2E 08 00 00 00 00 00 00 00 00 00
Scene 10: EB 90 00 12 00 ff 2E 09 00 00 00 00 00 00 00 00 00

Scenes Save:

Scene 1: EB 90 00 12 00 ff 2F 00 00 00 00 00 00 00 00 00 00
Scene 2: EB 90 00 12 00 ff 2F 01 00 00 00 00 00 00 00 00 00
Scene 3: EB 90 00 12 00 ff 2F 02 00 00 00 00 00 00 00 00 00
Scene 4: EB 90 00 12 00 ff 2F 03 00 00 00 00 00 00 00 00 00
Scene 5: EB 90 00 12 00 ff 2F 04 00 00 00 00 00 00 00 00 00
Scene 6: EB 90 00 12 00 ff 2F 05 00 00 00 00 00 00 00 00 00
Scene 7: EB 90 00 12 00 ff 2F 06 00 00 00 00 00 00 00 00 00
Scene 8: EB 90 00 12 00 ff 2F 07 00 00 00 00 00 00 00 00 00
Scene 9: EB 90 00 12 00 ff 2F 08 00 00 00 00 00 00 00 00 00
Scene 10: EB 90 00 12 00 ff 2F 09 00 00 00 00 00 00 00 00 00

8 Working Modes:

Single-Window: EB 90 00 11 00 ff 32 00 00 01 02 03 00 00 00 00 00
2-Window(LeftRight_Middle): EB 90 00 12 00 ff 32 01 00 01 02 03 00 00 00 00 00
2-Window(Pip_LeftTop): EB 90 00 11 00 ff 32 02 00 01 02 03 00 00 00 00 00
2-Window(Pip_RightBotom): EB 90 00 12 00 ff 32 03 00 01 02 03 00 00 00 00 00
3-Window(Up1Down2): EB 90 00 11 00 ff 32 04 00 01 02 03 00 00 00 00 00
3-Window(Up1Down2_02):EB 90 00 12 00 ff 32 05 00 01 02 03 00 00 00 00 00
3-Window(Pipx2_Down): EB 90 00 12 00 ff 32 06 00 01 02 03 00 00 00 00 00
4-Window(2x2): EB 90 00 12 00 ff 32 07 00 01 02 03 00 00 00 00 00

Window sources switching:

Win1~4 switch to PORT1~4(one on one): EB 90 00 12 00 ff 31 00 01 02 03 00 00 00 00 00
Win1~4 switch to PORT1(All windows showing same PORT1): EB 90 00 12 00 ff 31 00 00 00 00 00 00 00 00 00
Win1~4 switch to PORT1(All windows showing same PORT2):EB 90 00 12 00 ff 31 01 01 01 01 00 00 00 00 00 00
Win1~4 switch to PORT1(All windows showing same PORT3):EB 90 00 12 00 ff 31 02 02 02 02 00 00 00 00 00 00
Win1~4 switch to PORT1(All windows showing same PORT4):EB 90 00 12 00 ff 31 03 03 03 03 00 00 00 00 00 00

Image/Frame Freeze:

Freeze: EB 90 00 12 00 ff 2A 01 01 01 01 00 00 00 00 00 00
Unfreeze: EB 90 00 12 00 ff 2A 00 00 00 00 00 00 00 00 00 00

Audio Channel Switching:

Audio channel 1: EB 90 00 12 00 ff 30 00 00 00 00 00 00 00 00 00 00

Audio channel 2: EB 90 00 12 00 ff 30 0100 00 00 00 00 00 00 00 00

Audio channel 3: EB 90 00 12 00 ff 30 02 00 00 00 00 00 00 00 00 00

Audio channel 4: EB 90 00 12 00 ff 30 03 00 00 00 00 00 00 00 00 00

Commands in ASCII format:

1. All commands start with GET or SET, end with .(point)
2. Command ignore letter case. For example, 'GET HELP.' is same as 'get help.'
3. Command 'SET WIN1 IN1.' or 'SET WIN 1 IN 1.' or 'Set Win1 In1.' are the same
4. Command parameters show as ' _ '

-----SYSTEM-----

```
GET HELP.           //Get command list
GET VERSION.        //Get Software verion
SET RESET.          //Set to factory reset
SET REBOOT.         //Set machine to reboot
GET IN STATUS       //Set input1~4 cable status
```

-----RESOLUTION-----

```
SET OUT RES ____.   //Set output resolution
SET OUT RES 1920 1080 60.
GET OUT RES.        //Get current output resolution
SET IN_ RES RESET. //Set input y resolution to default
SET IN1 RES RESET.
SET INS RES RESET. //Set all input resolution to default
SET IN_ RES ____.   //Set input y resolution
SET IN1 RES 1920 1080 60.
SET INS RES ____.   //Set all input resolution
SET INS RES 1920 1080 60.
```

-----WINDOWS-----

```
SET WIN_ IN_.       //Set win x to in y
SET WIN1 IN1.       -> Set win1 to in1
SET WINS IN_.       //Set win1~4 to input1~y
SET WINS IN1.       ->Set win 1~4 to in1
SET WINS IN1 2.     ->Set win 1 2 to in 1 2
SET WINS IN1 2 3.   ->Set win 1 2 3 to in 1 2 3
SET WINS IN1 2 3 4. ->Set win 1 2 3 4 to in 1 2 3 4
SET WINS IN4 3 2 1. ->Set win 1 2 3 4 to in 4 3 2 1
SET WIN_ CROP ON. //Enable win x current input crop
SET WIN1 CROP ON.
SET WIN_ CROP OFF. //Disable win x current input crop
SET WIN1 CROP OFF.
SET WIN_ CROP _____. //Enable and set win x current input crop(Hstart,Vstart,Hsize,Vsize)
SET WIN1 CROP 0 0 960 540.
SET WIN_ POS SIZE _____. //Set win x coordinate(Hstart,Vstart,Hsize,Vsize)
SET WIN1 POS SIZE 0 0 800 600.
SET WIN_ POS ___.   //Set win x position(Hstart,Vstart)
SET WIN1 POS 0 0.
SET WIN_ SIZE ___. //Set win x size(Hsize,Vsize)
```

```

SET WIN1 SIZE 800 600.
SET _WIN MODE_.           // Set multi- x win mode N
SET 1WIN MODE1.          -> 1WIN MODE1
SET 2WIN MODE1.          -> 2WIN MODE1 to N
SET 3WIN MODE1.          -> 3WIN MODE1 to N
SET 4WIN MODE1.          -> 4WIN MODE1 to N
SET TEMPLATE_.           //Set multi-win template 1 to 8
SET TEMPLATE 1.
SET WIN_ ROT_.           //Set win x rotation y, y can be 0 90 180 270
SET WIN1 ROT 270.        ->win1 rot 270
SET WINS ROT_.           // Set win 1~4 rotation, rotation can be 0 90 180 270
SET WINS ROT 270.        ->win1~4 rot 270
SET WINS ROT 270 90.     ->win1 rot 270, win2 rot 90
SET WINS ROT 270 90 180. ->win1 rot 270, win2 rot 90, win3 rot 180
SET WINS ROT 270 90 0 180. ->win1 rot 270, win2 rot 90, win3 rot 0, win4 rot 180

```

-----MOSAIC-----

```

SET WIN_ MOSAIC _x_ ___. //Enable and set winx mosaic (hUnit,vUnit,hPos,vPos)
SET WIN1 MOSAIC 4x4 2 2.
SET WIN_ MOSAIC ON.      //Enable win x mosaic
SET WIN1 MOSAIC ON.SET WIN_ MOSAIC OFF. //Disable win x mosaic
SET WIN1 MOSAIC OFF.

```

-----COLOR-----

```

SET BRIGHTNESS_.        //Set brightness value 0~255, default: 128
SET BRIGHTNESS 200.
SET BRIGHTNESS RGB ___ //Set brightness R/G/B value 0~255, defaul 200 100 50. ->Set brightness t:
128
SET BRIGHTNESS RGB 200. ->Set brightness R t 100. ->Set brightness RG to 200
SET BRIGHTNESS RGB 200o 200 100
SET BRIGHTNESS RGBRGB to 200 100 50
SET CONTRAST_.          //Set contrast value 0~100, default: 50
SET CONTRAST 80.

```

-----MODE-----

```

SET LOAD MODE_.         // Load mode 1 ~ 10
SET LOAD MODE1.
SET SAVE MODE_.         // Save mode 1 ~ 10
SET SAVE MODE1.

```

-----AUDIO-----

```

SET AUDIO MUTE ON.      //Audio mute
SET AUDIO MUTE OFF.    //Audio Unmute
SET AUDIO VOL_.        //Set audio volume value 0 ~ 100, default: 100
SET AUDIO VOL 80.
SET AUDIO VOL+.         //Audio volume+1
SET AUDIO VOL-.         //Audio volume-1
SET AUDIO WIN_.        //Set Audio to win x
SET AUDIO WIN1.
SET AUDIO IN_.         //Set Audio to in y
SET AUDIO IN1.

```

9. After-Sales

9.1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 2 (2) 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.

9.2 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