## Introduction

This is a 1-card 1-port WolfPack 4K60 Quad View Output Card to be used on the 8x8, 16x16 and 36x36 80x80 modular chassis matrix, it can support several workings modes(quad-view, single-picture, PIP, etc) and this card can be controlled via the remote control, sending RS232 codes or pushing the LAYOUT key, the output resolution can up to 4K60. The UVC USB port is for the USB capture, this card also supports the 3.5mm audio de-embedded.
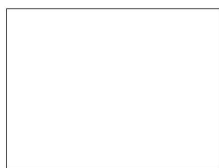
## Features

➢ Output resolution up to 4K60
➢ Supports RS232/IR remote and LAYOUT key control
➢ Supports several working modes
➢ Supports 1-card 1-port
➢ Supports the USB capture
➢ Supports 3.5mm audio de-embedded
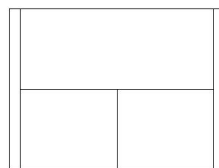➢ Can work with the 8x8, 16x16, 36x36 and 80x80 Card Cage chassis
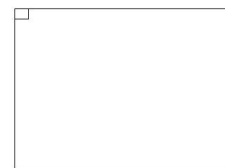
## Working modes:
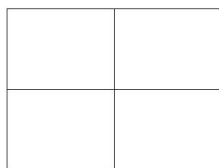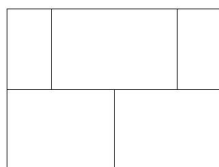


Mode one: quad view ( will display 4 inputs

Mode two: will seperately display each input

Mode three: display 3 inputs ( one up plus two below, the below two zoom out

Mode four: dual view ( PIP, the smaller picture is on the left top )

Mode five: will display 3 inputs, one up and two below, the below two with original size
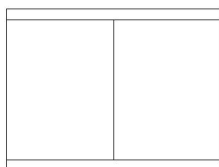
Mode six: dual view( left and right)
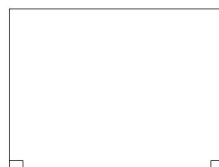
Mode seven: will display 3 pictures( one big plus two small)

Mode eight: dual view ( PIP, the smaller picture is on the right bottom)

## Specification

| Input | 1 x HDMI2.0(4K60); 3 x HDMI1.4(4K30) |
|---|---|
| Input resolution | • **HDMI2.0:** <br> 640x480[8], 800x600[8], 1024x768[8], 1280x768[8], 1280x800[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1440x900[8], |

| | |
|---|---|
| | 1400x1050[8], 1600x1200[8], 1680x1050[8], 1920x1200[8], 720x480[8] (480p), 720x576[6] (576p), 1280x720[5] (720p30), 1280x720[6] (720p50), 1280x720[8] (720p60), 1920x1080[2] (1080p24), 1920x1080[3] (1080p25), 1920x1080[5] (1080p30), 1920x1080[6] (1080p50), 1920x1080[8] (1080p60), 3840x2160[5](2160p30),3840x2160[6] (2160p50), 3840x2160[8] (2160p60) |
| | • **HDMI1.4:** |
| | 640x480[8], 800x600[8], 1024x768[8], 1280x768[8], 1280x800[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1440x900[8], 1400x1050[8], 1600x1200[8], 1680x1050[8], 1920x1200[8], 720x480[8] (480p), 720x576[6] (576p), 1280x720[5] (720p30), 1280x720[6] (720p50), 1280x720[8] (720p60), 1920x1080[2] (1080p24), 1920x1080[3] (1080p25), 1920x1080[5] (1080p30), 1920x1080[6] (1080p50), 1920x1080[8] (1080p60), 3840x2160[5](2160p30) |
| | 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 |
| Output | 1* HDMI2.0, 1*USB2.0 for the OBS capture |
| Output resolution | **HDMI2.0:** <br> 1920x1080[6] (1080p50), 1920x1080[8] (1080p60), 3840x2160[5] (2160p30) , 3840x2160[6] (2160p50) , 3840x2160[8] (2160p60) <br><br> 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 <br> **USB2.0:** 1080P30 |
| **Audio** | |
| Input | 4 x HDMI |
| Input audio signal | RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0 |
| Output | 1 x HDMI2.0;1 x Analog Audio, 1*USB2.0 |
| Output audio signal | RAW PCM, 16 bit, 32/44.1/48KHz sps; PCM 2.0 |
| **Control method** | |
| Front panel button | LAYOUT switch key |
| IR | Can realize all the functions of the button, also support fast switching |
| RS232 | The interface is a 3pin phoenix segment, which support third-party control |
| **General parameters** | |
| Operating temperature | 0　to +45°C (32 to + 113 °F) |
| Storage temperature | -20 to +70°C (-4 to + 158 °F) |
| Relative humidity | 10% to 90%, |
| Static Protection | Human body discharge mode:±8kV (Air gap discharge)/ <br> ±4kV (Contact discharge) |
| Power supply | 12 V 1.5 A DC |
| Power consumption | 10W(Max) |
| Measure | 223X27X97(mm) |
| Net weight | 0.8kg |

## Control commands

**RS232:** Baud rate, 115200, Data bit: 8, Stop bit: 1, Check bit: None(The commands can be ASCII(can send GET HELP. , then it will show up the full command list))

**TCP:** through the Matrix LAN ports, port number is 5000

**UDP**: through the matrix LAN ports, port number is 4000

### 8 Working Modes:

**Single-Window:** EB 90 00 11 00 ff 32 00 00 01 02 03 00 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 00

**2-Window**(Pip_LeftTop): EB 90 00 11 00 ff 32 02 00 01 02 03 00 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 00

**3-Window**(Up1Down2): EB 90 00 11 00 ff 32 04 00 01 02 03 00 00 00 00 00 00

**3-Window**(Up1Down2_O2): EB 90 00 12 00 ff 32 05 00 01 02 03 00 00 00 00 00 00

**Quad-view(**2x2): EB 90 00 12 00 ff 32 06 00 01 02 03 00 00 00 00 00 00

**4-Window**(1+3right): EB 90 00 12 00 ff 32 07 00 01 02 03 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 00 00

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

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

## Resolutions:

**1920x1080@60:** EB 90 00 12 00 ff 23 00 00 00 00 00 00 00 00 00 00 00 00

**1920x1080@50:** EB 90 00 12 00 ff 23 01 00 00 00 00 00 00 00 00 00 00 00

**1920x1200@60:** EB 90 00 12 00 ff 23 02 00 00 00 00 00 00 00 00 00 00 00

**1360x768@60**: EB 90 00 12 00 ff 23 03 00 00 00 00 00 00 00 00 00 00 00

**1280x720x60:** EB 90 00 12 00 ff 23 04 00 00 00 00 00 00 00 00 00 00 00

**1024x768x60:** EB 90 00 12 00 ff 23 05 00 00 00 00 00 00 00 00 00 00 00

**2560X1600x60:** EB 90 00 1200 ff 23 06 00 00 00 00 00 00 00 00 00 00 00

**2560X1600x50:** EB 90 00 12 00 ff 23 07 00 00 00 00 00 00 00 00 00 00 00

**3840x2160x60:** EB 90 00 12 00 ff 23 08 00 00 00 00 00 00 00 00 00 00 00

**3840x2160x50:** EB 90 00 12 00 ff 23 09 00 00 00 00 00 00 00 00 00 00 00

**3840x2160x30:** EB 90 00 12 00 ff 23 0A 00 00 00 00 00 00 00 00 00 00 00

**3840x2160x25:** EB 90 00 12 00 ff 23 0B 00 00 00 00 00 00 00 00 00 00 00

**3840x2160x24:** EB 90 00 12 00 ff 23 0C 00 00 00 00 00 00 00 00 00 00 00

**4096x2160@60:** EB 90 00 12 00 ff 23 0D 00 00 00 00 00 00 00 00 00 00 00

**4096x2160@30:** EB 90 00 12 00 ff 23 0E 00 00 00 00 00 00 00 00 00 00 00

**720x480@60:** EB 90 00 12 00 ff 23 0F 00 00 00 00 00 00 00 00 00 00 00

**720x576@50:** EB 90 00 12 00 ff 23 10 00 00 00 00 00 00 00 00 00 00 00

**2560x1080@60:** EB 90 00 12 00 ff 23 11 00 00 00 00 00 00 00 00 00 00 00

**2560x1440@60:** EB 90 00 12 00 ff 23 12 00 00 00 00 00 00 00 00 00 00 00

**4096X1424@60:** EB 90 00 12 00 ff 23 FF 10 00 05 90 3C 00 00 00 00 00 00

## Image rotate(only works when Single-window mode)

**Normal display** EB 90 00 11 00 ff 27 00 00 01 02 03 00 00 00 00 00

**90 degrees rotate** EB 90 00 11 00 ff 27 00 00 01 02 03 01 00 00 00 00

**270 degrees rotate** EB 90 00 11 00 ff 27 00 00 01 02 03 02 00 00 00 00

**180 degrees rotate with Mirroring** EB 90 00 11 00 ff 27 00 00 01 02 03 03 00 00 00 00

**Mirroring** EB 90 00 11 00 ff 27 00 00 01 02 03 04 00 00 00 00

**180 degrees rotate** EB 90 00 11 00 ff 27 00 00 01 02 03 05 00 00 00 00

**Factory Reset:** EB 90 00 12 00 ff 21 00 00 00 00 00 00 00 00 00 00 00 00