# LED Video Controller

## Specification V1.0

## Overview

LED Video Controller is a controller with powerful video input and processing capacity. It supports 4K inputs with DP 1.2 and HDMI 2.0 connectors, and 2K inputs with HDMI 1.4 and DVI connectors. A single unit features a loading capacity of 13.10 million pixels. Equipped with 20 Gigabit Ethernet ports and 4×10G optical fiber ports (2 active and 2 standby), the controller is able to meet the need of different clients. Additionally, the controller boasts abundant practical functions that enable flexible screen control and high-quality image display.

## Features

### Input

- Maximum 4096×2160@60Hz.
- 4K input interface: 1× DP1.2, 1× HDMI2.0.
- 2K input interface: 2× HDMI1.4, 2× DVI.
- U-DISK interface: 1× USB3.0.

### Output

- Maximum loading capacity 13.10 million pixels.
- 20 Gigabit Ethernet ports output or 4×10 Gigabit optical ports output. (2 active and 2 standby)[①].

### Audio

- 1× 3.5mm input.
- 1× 3.5mm, support HDMI and DP audio outputs.

### Function

- Up to 6-window display, 1 layer per window.[②]
- Support freely moving the window, the size is at least 64×64.
- Support freely cropping and seamless switching, the size is at least 64×64.
- Adjusting display color gamut with precision color management, it needs corresponding specific receiving cards.
- lock internal sync, input signal source frame, automatic phase locking (according to the layer).
- Bright and color temperature adjustment with precision.

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① Ethernet port output and optical port output cannot be used at the same time.

② When one 4K input signal, it can also support four 2K input; when two 4K input signals, only 2 windows can be opened.

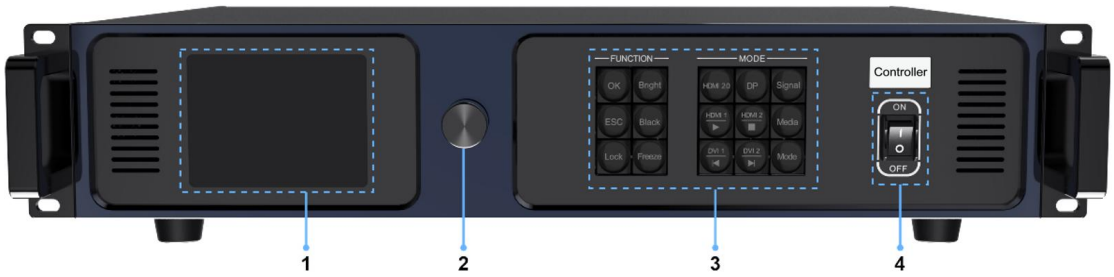
- 3D display (purchase separately).
- Better grayscale at low brightness for improving the grayscale performance in low brightness.
- 128 scene parameters can be saved and recalled.
- Upgrade program and play photos, videos with U-disk.
- OSD is used to play videos, pictures and adjust the screen display (optional).

### Control

- USB port for control and cascading.
- RS232 protocol.
- LAN port for TCP/IP control.
- Android APP for phones and tablets.

## Appearance

### Front panel




| No. | Item | Function |
|---|---|---|
| 1 | LCD screen | Display the operation menu and system information. |
| 2 | Knob | Press the knob to access the submenu or confirm.<br>Turn the knob to select menu items or adjust parameters. |
| 3 | Function button | • **OK**: Enter.<br>• **Bright**: Adjust brightness.<br>• **ESC**: Exit the current interface.<br>• **Black**: Black the screen.<br>• **Lock**: Lock the front panel keys.<br>• **Freeze**: Freeze the output screen.<br>• **HDMI 2.0 / DP / HDMI 1 / HDMI 2 / DVI 1 / DVI 2**<br>- Switching to a signal source by clicking corresponding button.<br>- In U-disk playback mode, these buttons serve respectively as play / pause, stop, previous and next. |

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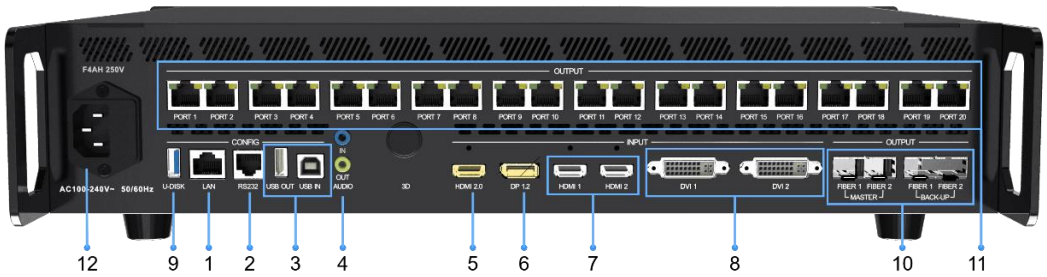
| | | • **Signal**: View signal status.<br>• **Media**: Media playback function buttons.<br>• **Mode**: Choose a preset scene. |
| 4 | Power Switch | Switch on / off. |

* The product pictures are for reference only, please refer to the actual product.

## Rear panel

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| **Control** | | |
| 1 | LAN | RJ45 port, connect to a switch for accessing local area network. |
| 2 | RS232 | *RJ11 port(6P6C), connect to third-party device. |
| 3 | USB IN | USB2.0 Type B port, connect to PC for debugging. |
| | USB OUT | USB2.0 Type A port, as cascading output. |
| **Audio** | | |
| 4 | AUDIO IN | • Interface type: 3.5mm.<br>• Receive audio signals from computers and other equipment. |
| | AUDIO OUT | • Interface type: 3.5mm.<br>• Support HDMI, DP audio decoding and output audio signals to device such as active speakers. |
| **3D** | | |
| 5 | 3D* | Output 3D sync signal (optional, for use with active 3D glasses). |
| **Input** | | |
| 6 | HDMI 2.0 | • 1×HDMI2.0 input, support HDMI1.4/HDMI1.3.<br>• Maximum 4096×2160@60Hz, maximum pixel clock 600MHz.<br>• Customized resolution: up to 8192 pixels in width or in height.<br>• Support EDID settings.<br>• Support audio input. |
| 7 | DP 1.2 | • 1×DP1.2 input.<br>• Maximum 4096×2160@60Hz, maximum pixel clock 600MHz.<br>• Customized resolution: up to 8192 pixels in width or in height.<br>• Support EDID settings.<br>• Support audio input. |

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| 8 | HDMI 1, HDMI 2 | • 2× HDMI1.4 input.<br>• Maximum 1920×1200@60Hz, maximum pixel clock 165MHz.<br>• Customized resolution: up to 4096 pixels in width or in height.<br>• Support EDID settings.<br>• Support audio input. |
| 9 | DVI 1, DVI 2 | • 2× DVI input.<br>• Support 1920×1200@60Hz, maximum pixel clock 165MHz.<br>• Customized resolution: up to 4096 pixels in width or in height.<br>• Support EDID settings. |
| 10 | U-DISK | • U-disk interface, hot-swappable, support play video / photo playback from U-disk.<br>• USB flash drive format: NTFS, FAT32, exFAT.<br>• Image format: JPEG, BMP, PNG, WEBP, GIF.<br>- Maximum image 4096×2160.<br>• Video file: 3GP, AVI, FLV, M4V, MKV, MP4, TP, TS, VOB, WMV, MPEG.<br>- Video encoding: MPEG-1 / 2, MPEG-4, H.264/AVC, H.265/HEVC, GOOGLE VP8, MOTION JPEG.<br>- Audio encoding: MPEG Audio, Windows Media Audio, AAC Audio, AMR Audio.<br>- Maximum 4096×2160@60Hz. |
| **Output** | | |
| 11 | FIBER 1, FIBER 2 (MASTER)<br>FIBER 1, FIBER 2 (BACK-UP) | • 4×10G Optical interfaces (2 active and 2 standby).<br>- FIBER 1 corresponds to PORT 1-10 Gigabit Ethernet ports output.<br>- FIBER 2 corresponds to PORT 11-20 Gigabit Ethernet ports output.<br>• Equipped with 10G single-mode optical module (purchase separately), the device supports dual LC fiber interface (wavelength 1310nm, transmission distance 2 km). |
| 12 | PORT 1-20 | • 20 Gigabit Ethernet ports.<br>- One network port load capacity: 655360 pixels, total load capacity is 13.10 million pixels<br>- Maximum 16384 pixels in width or 8192 pixels in height.<br>• The recommended maximum cable (Cat 5e) run length is 100 meters. |

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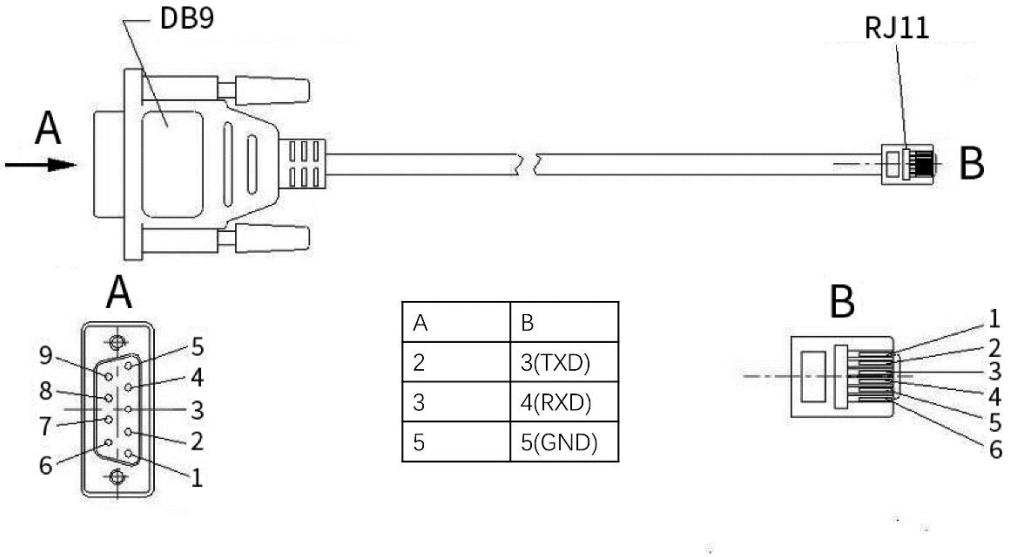
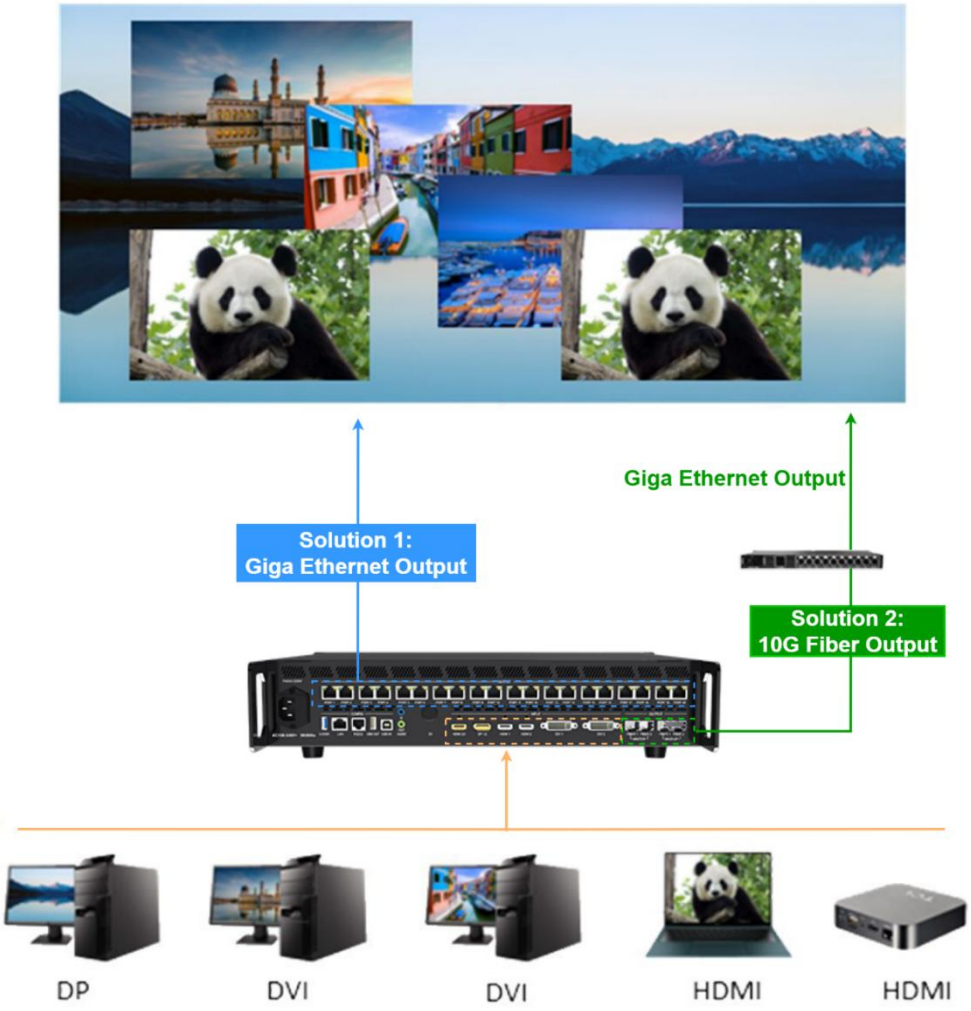
| | | • Support redundant backup. |
| **Power supply** | | |
| 13 | Power Socket | AC100-240V, 50 / 60Hz, connect to AC power supply, built-in fuse. |

* DB9 female to RJ11(6P6C) cable:




| A | B |
|---|---|
| 2 | 3(TXD) |
| 3 | 4(RXD) |
| 5 | 5(GND) |

## Applications



## Signal format

| Input | Color space | Sampling | Color depth | Max Resolution | Frame rate |
|---|---|---|---|---|---|
| HDMI2.0 | YCbCr | 4:2:2 | 8bit | 4096×2160@60Hz | 23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240 |
| | YCbCr/ RGB | 4:4:4 | 8bit | | |
| DP1.2 | YCbCr | 4:2:2 | 8bit | 4096×2160@60Hz | 23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240 |
| | YCbCr/ RGB | 4:4:4 | 8bit | | |
| DVI | YCbCr | 4:2:2 | 8bit | 1920×1200@60Hz | 23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240 |
| | YCbCr/ RGB | 4:4:4 | 8bit | | |
| HDMI 1.4 | YCbCr | 4:2:2 | 8bit | 1920×1200@60Hz | 23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240 |
| | YCbCr/ RGB | 4:4:4 | 8bit | | |

* Only some of the regular resolutions are shown above.

## Parameters

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|---|---|
| **Dimensions (W×H×D)** | |
| Unboxed | 482.6mm (19") × 103.0mm (4.1") ×415.0mm (16.3"), w/o foot pads. |
| Boxed | 550.0mm (21.7") × 175.0mm (6.9") ×490.0mm (19.3"). |
| **Weight** | |
| Net weight | 6.20kg (13.67lbs). |
| Total weight | 8.90kg (19.62lbs). |
| **Electrical specification** | |
| Power input | AC100-240V, 2.1A, 50 / 60Hz. |
| Rated power | 80W |
| **Operating environment** | |
| Temperature | -20°C~65°C (-4°F~149°F). |
| Humidity | 0%RH~80%RH, no condensation. |
| **Storage environment** | |
| Temperature | -30°C~80°C (-22°F~176°F). |
| Humidity | 0%RH~90%RH, no condensation. |

## Reference dimensions

Unit: mm