LINK-MI®

LINK-MULTIMEDIA INTERFACE

LINK-MI D Series Modular 4K Video Wall Controller

Model: LM-TV04D

User Manual

Catalog

Safety Notice for Electrical Appliance Use

This product is classified as a low-voltage electrical appliance. Please follow standard low-voltage electrical safety regulations when using this device.

Not just a 4K60 video wall controller

but also an Ultra-high-resolution Processor

As a 4K Video Wall Controller

- Supports a wide range of signal sources, including PC, Blu-ray, PS2, Android devices, and more
- Complies with HDCP 2.2 protocol
- Supports true 4K@60Hz input in RGB format
- Features include 180° image rotation, edge masking, signal switching, and more
- Enables flexible splicing configurations for up to 16 screens in various layouts (excluding 1x16 and 16x1)
  (Note: LM-TV04D supports video wall modes for up to 4 displays only)

As an Ultra-High-Resolution Video Wall Processor

- Supports ultra-high-resolution input up to 5760×3240@30Hz, with various point-to-point display modes at 60Hz
- Enables customizable scaling for ultra-high-resolution display without distortion
- Allows flexible splicing configurations for up to 16 screens in any layout (excluding 1x16 and 16x1)
  (Note: LM-TV04D supports video wall modes for up to 4 displays only)

1. Introduction

The LM-TV04D is a 2x2 video wall controller supporting DP 1.2 and HDMI 2.0 inputs, enabling ultra-high-resolution displays up to 5760x3240@30Hz. It offers customizable splicing modes, multiple output resolutions, 180-degree image rotation, and edge masking. Ideal for digital signage, control rooms, and professional AV setups.

2. Key Features

1. **Dual Input Support**: Equipped with 1 DP1.2 and 1 HDMI2.0 input for flexible signal access.
2. **Flexible Splicing Options**: Customizable video wall layouts within 16 screens (excluding 1x16 and 16x1). *LM-TV04D supports up to 4 displays only.*
3. **Modular Design**: Scalable architecture allows for customizable splicing configurations to suit diverse project needs.
4. **Ultra-High Resolution Input**: DP input supports resolutions up to 5760x3240@30Hz and 5760x1080@60Hz.
5. **Custom Resolution Output**: Ensures distortion-free, non-stretched visuals on ultra-wide displays.
6. **Wide Compatibility**: Offers multiple output resolution options to match various LCDs and projectors.
7. **Lossless Point-to-Point Display**: Delivers pixel-to-pixel output in common layouts like 1x2, 1x3, 2x1, 2x3, 3x1, 3x2, and 3x3. *Other layouts use proportional scaling. LM-TV04D supports up to 4 displays only.*
8. **Large-Scale Video Wall Support**: Enables point-to-point display across extended walls when using multiple units.
9. **Advanced Image Control**: Supports 180° image rotation and customizable edge masking for clean and flexible display setup.
10. **Multiple Control Options**: Operate via IR remote, front-panel buttons, or RS-232 serial control.

3. Splicing Modes

Supports free customization of video wall layouts ranging from 2 to 16 display units, excluding 1x16 and 16x1 modes.

Note: The LM-TV04D supports a maximum of 4 displays per setup.

2X2

2X1

3X1

4X1

1X2

1X3

1X4

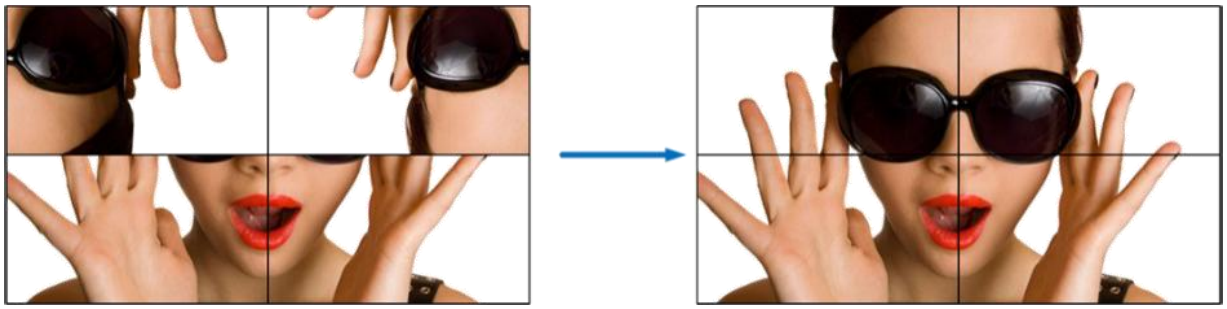
4. Output Resolutions

Offers multiple output resolution options for broader compatibility with various display devices, including LCD screens and projectors. Supported resolutions include:

- 1024×768
- 1280×720
- 1280×800
- 1600×900
- 1920×1080
- 1920×1200

5. 180-Degree Image Rotation

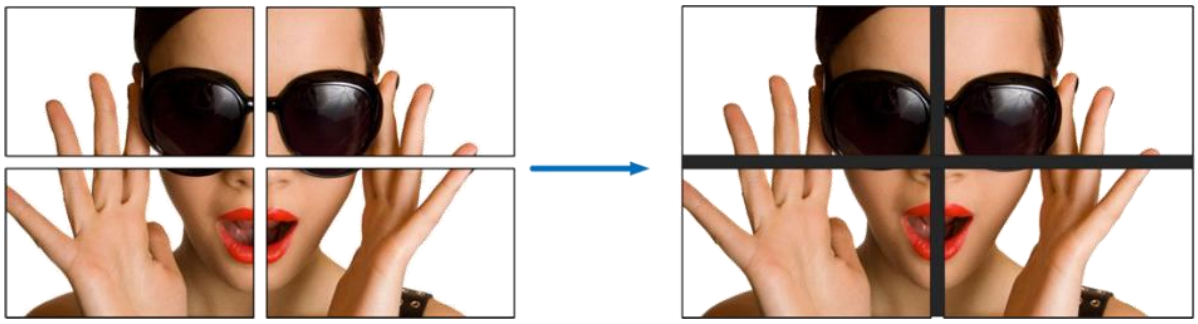
Each display unit supports independent 180-degree image rotation. This is especially useful when using LCD screens in tiled setups—flipping the top row can significantly reduce bezel gaps and minimize image distortion caused by seam alignment.



6. Edge Masking Function

Physical gaps between display units may distort the overall image. The edge masking function eliminates this distortion by compensating for bezels, ensuring a more natural and seamless viewing experience.

A before-and-after comparison is shown below.



7. Input Formats and Supported Resolutions

DP Input – Native Resolution Support

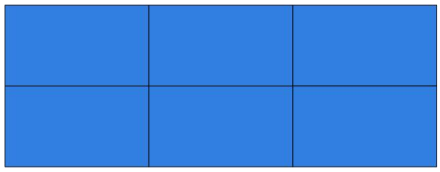
- Supports 3840×2160@60Hz in all splicing modes.

- Supports point-to-point ultra-high-resolution input (e.g., 5760×3240@30Hz, 5760×1080@60Hz) in compatible modes.

3840x1080/1200@60HZ

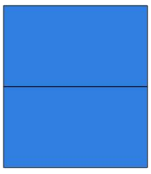
5760x1080/1200@60HZ

3840x1080/1200@60HZ

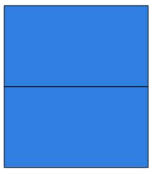


5760x2160@30HZ

5760x3240@30HZ

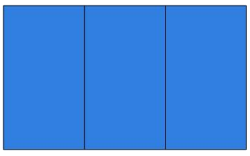


1920x2160@60HZ



1920x3240@60HZ

2160x1920@60HZ



3240x1920@60HZ

DP Supports Scalable Resolutions

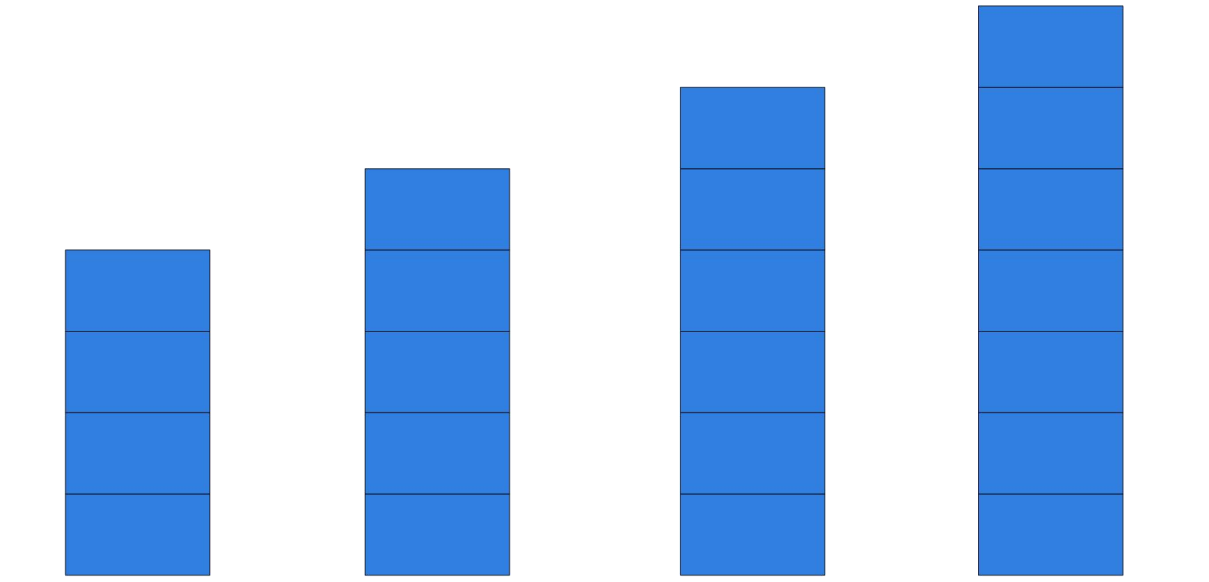
- Custom scaling via graphics card is available for non-standard resolutions.

1x4：5440x756@60hz

1x5：5040x567@60hz

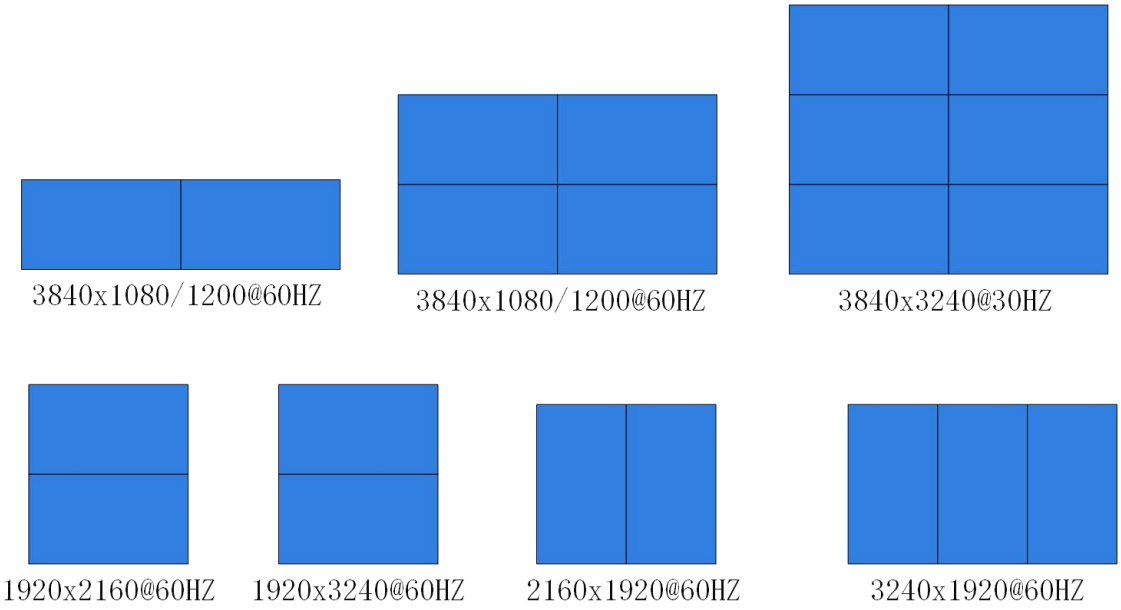
1x6：4896x459@60hz

1x7：4704x378@60hz



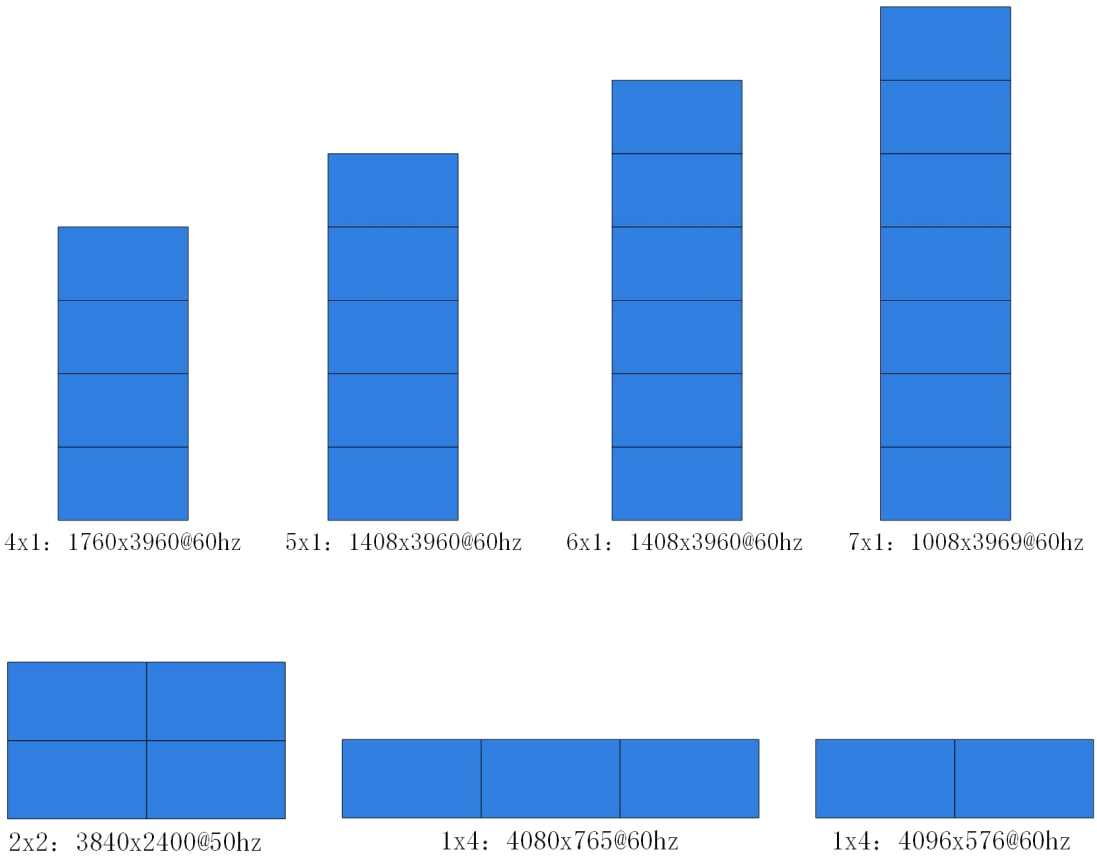
HDMI Input – Native Resolution Support

- Supports 3840×2160@60Hz in all splicing modes and simultaneously support point-to-point resolution input in the following modes:



HDMI Supports Scalable Resolution Input

- Proportional scaling available through graphics card configuration.



8. Control Methods

Control the unit via:

- Infrared (IR) remote control
- Front panel buttons
- RS-232 serial port connection to PC software

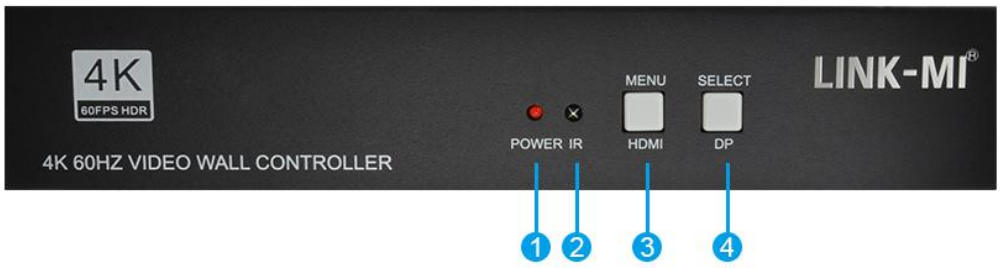
9. Cascading for Ultra-High -Resolution Splicing

Multiple LM-TV04D units can be cascaded with PCs and multi-output graphics cards to create ultra-high-resolution video walls.

Example: Two units can achieve a resolution of 11520×3240.

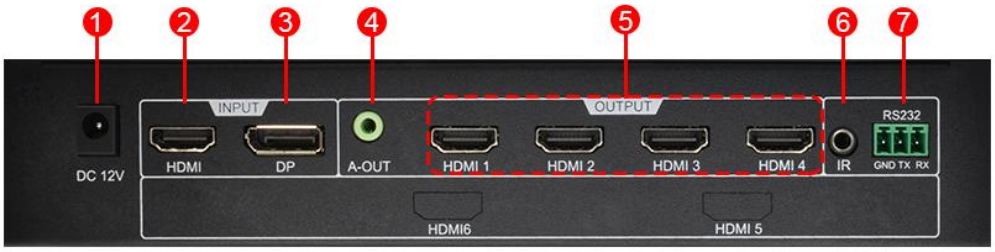
10. Panels and Interfaces

Front Panel



1. Power indicator light
2. IR signal receiving window
3. Menu / Down / Mode Switch | HDMI Signal Indicator
4. Right / Confirm / Reset | DP Signal Indicator

Rear Panel



1. DC 12V Power Supply
2. HDMI input
3. DP input
4. 3.5mm audio output
5. Video Wall Out (HDMI 1-4)
6. IR Ext
7. RS-232

Control Panel Instructions

Front Panel Operation:

- Press HDMI: Open menu / move down
- Press DP: Move right / confirm
- Press & hold HDMI (2+ seconds): Switch to common mode
- Press & hold DP (2+ seconds): Reset to factory settings

Indicator Lights:

- HDMI blinking: HDMI signal not detected
- DP blinking: DP signal not detected
- HDMI solid: HDMI is current source
- DP solid: DP is current source

Chassis Types:

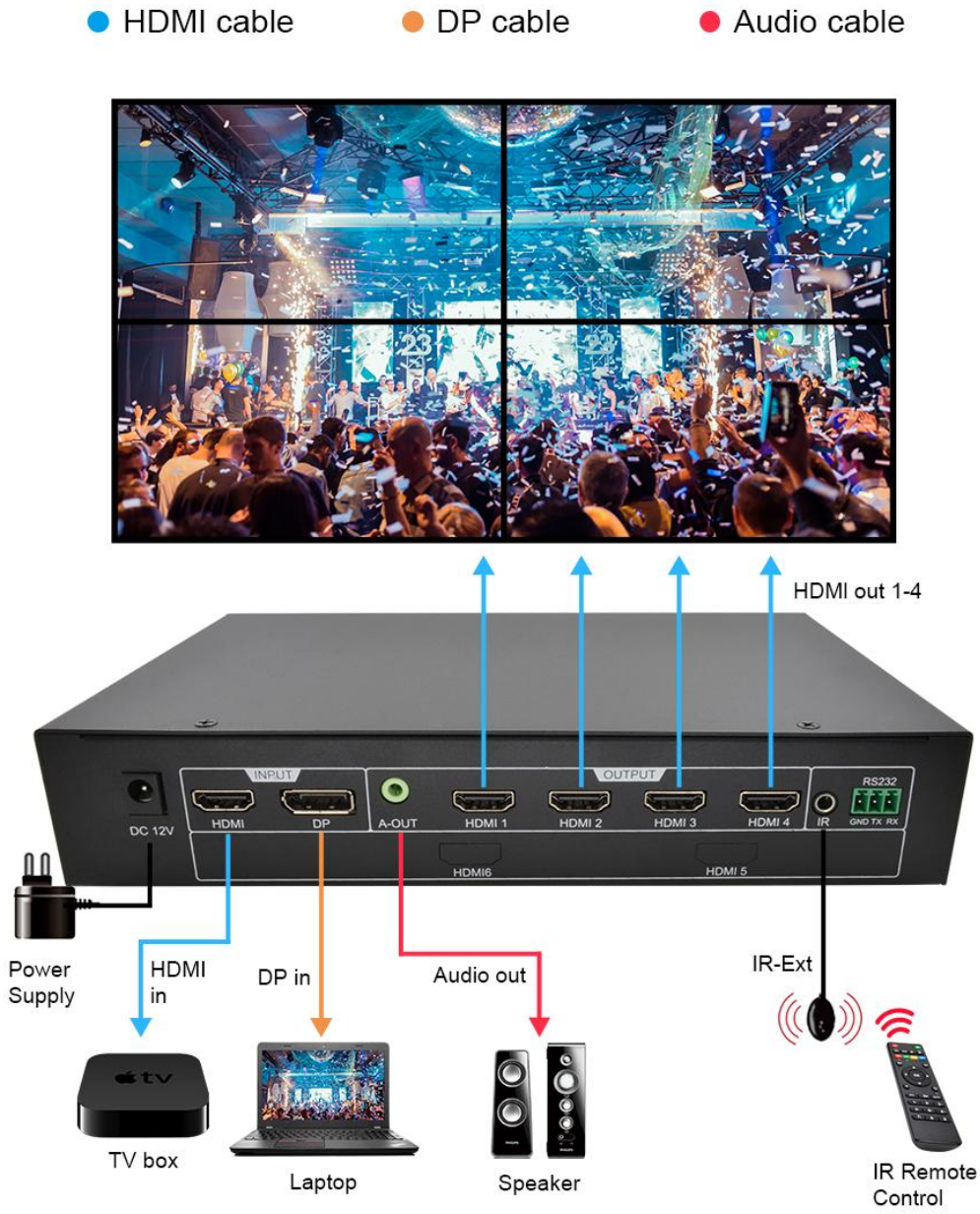
- Small Chassis: 2 to 6 screens

- Standard 1U Chassis: 7 to 13 screens (customizable)

- Standard 2U Chassis: 14 to 16 screens (customizable)

Remote control and central control codes are compatible with all chassis types.

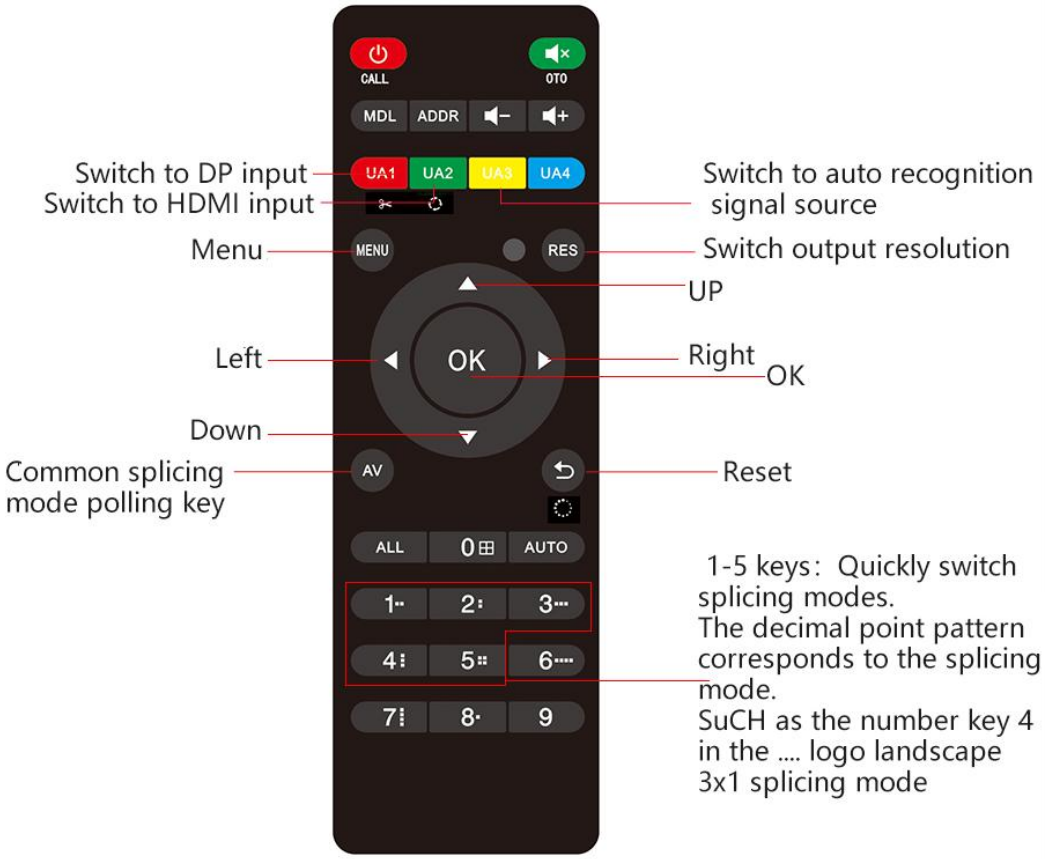
11. Connection Diagram



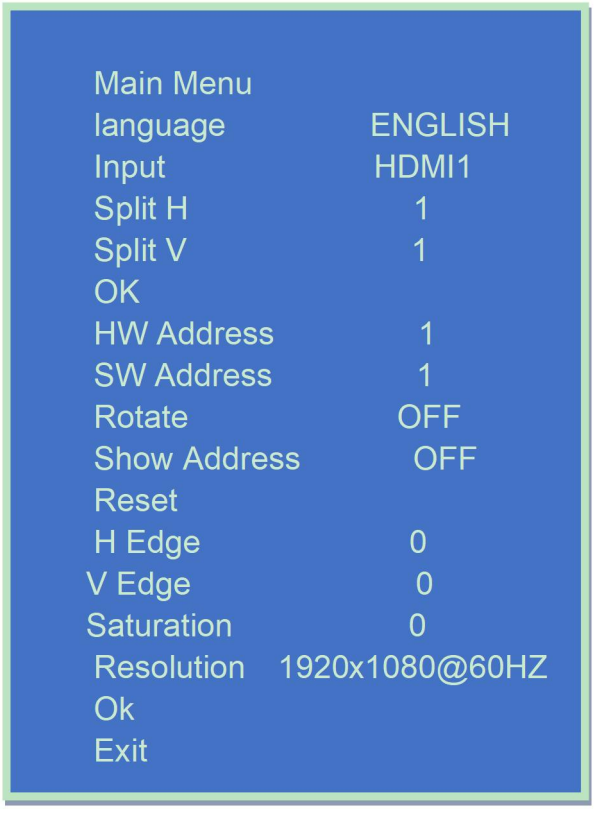
12. IR Remote & OSD Menu

Control all functions via remote:

- Input switching
- Splicing mode switching
- 180° rotation
- Edge masking
- Software address configuration



OSD Menu Functions:



- Language: Set the OSD menu language
- Input: Switch the input signal source
- Split H: Set the number of horizontal (landscape) screens
- Split V: Set the number of vertical screens
- HW Address: Set the hardware address (physical address of the screen)
- SW Address: Set the software mapping address
- Rotate: Enable or disable 180° image rotation
- Show Address: Enable or disable the screen address on the output
- Reset: Factory Reset
- H Edge: Adjust the horizontal edge masking
- V Edge: Adjust the vertical edge masking
- Saturation: Adjust the image saturation level

13. Functions Setting

1. Change Splicing Mode

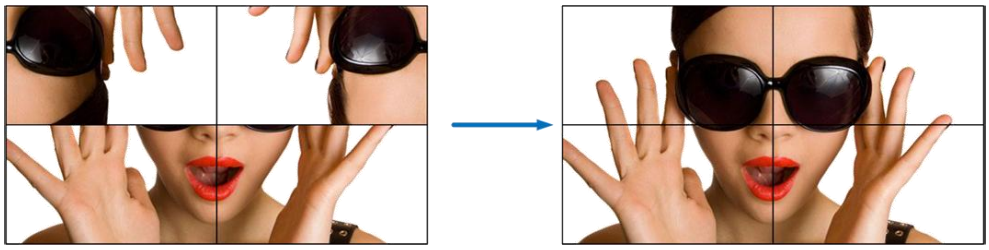
Use keys 1–5 on the remote to switch layouts. For vertical layouts, set the horizontal mode first, then rotate displays 90° via your PC.

2. Change Software Address

Re-map screen addresses using the remote menu if screen-output port mapping is incorrect.

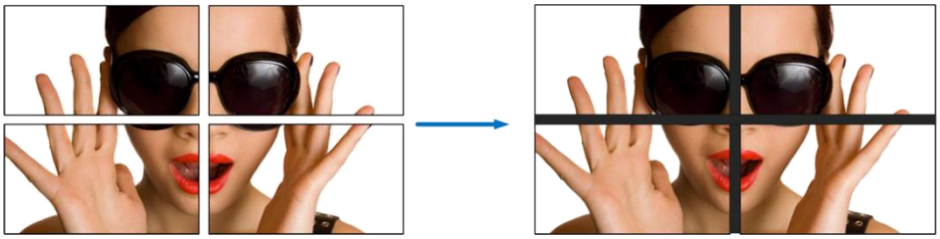
3. Image Rotation (180°)

Use Flip function on the remote menu after selecting the screen address.



4. Edge Masking

Adjust H/V edges via the Edge Adjustment menu to correct display alignment.



5. Other Settings

Refer to the remote function key map for extended configuration.

14. Technical Specifications

Brand Name	LINK-MI
Model Number	LM-TV04D
Product Name	2X2 Video Wall Controller 4K@60Hz
Technical	
Input Resolution	**HDMI input:** Max 3840×2160@60Hz, 1920×3240@60Hz, 3840×3240@30Hz; downward compatible and supports custom resolutions **DP input:** Max 3840×2160@60Hz, 5760×1080@60Hz, 5760×2160@30Hz, 5760×3240@30Hz, 1920×3240@60Hz, and 3840×3240@30Hz; downward compatible and supports custom resolutions
Output Resolution	1024×768@60Hz, 1280×800@60Hz, 1280×720@60Hz, 1920×1080@60Hz, 1920×1200@60Hz, and 1600×900@60Hz; switchable resolutions for flexible display settings
Color Depth	24-bit, 16.77 million colors
Interfaces	
Input Ports	1× HDMI 2.0 Input, 1× DP 1.2 Input
Output Ports	4× HDMI outputs, built-in audio
	1× 3.5mm analog audio output
Control Ports	1× RS232, 1× IR Ext
Functions	
Display Units	For max. 4 screens (Customizable for up to 16-screen splicing, excludes 1x16 / 16x1)
Control Ways	Panel buttons, Remote, RS232
Video Wall Modes	1x1, 1x2, 1x3, 1x4, 2x1, 2x2, 3x1, 4x1

Other Functions	180 degrees rotation, bezel adjustment...etc
Mechanical	
Power Supply	DC 12V 3A
Housing	Metal Enclosure
Color	Black
Product Dimensions	302×152×40mm (L×W×H)
Product Weight	1.3KG

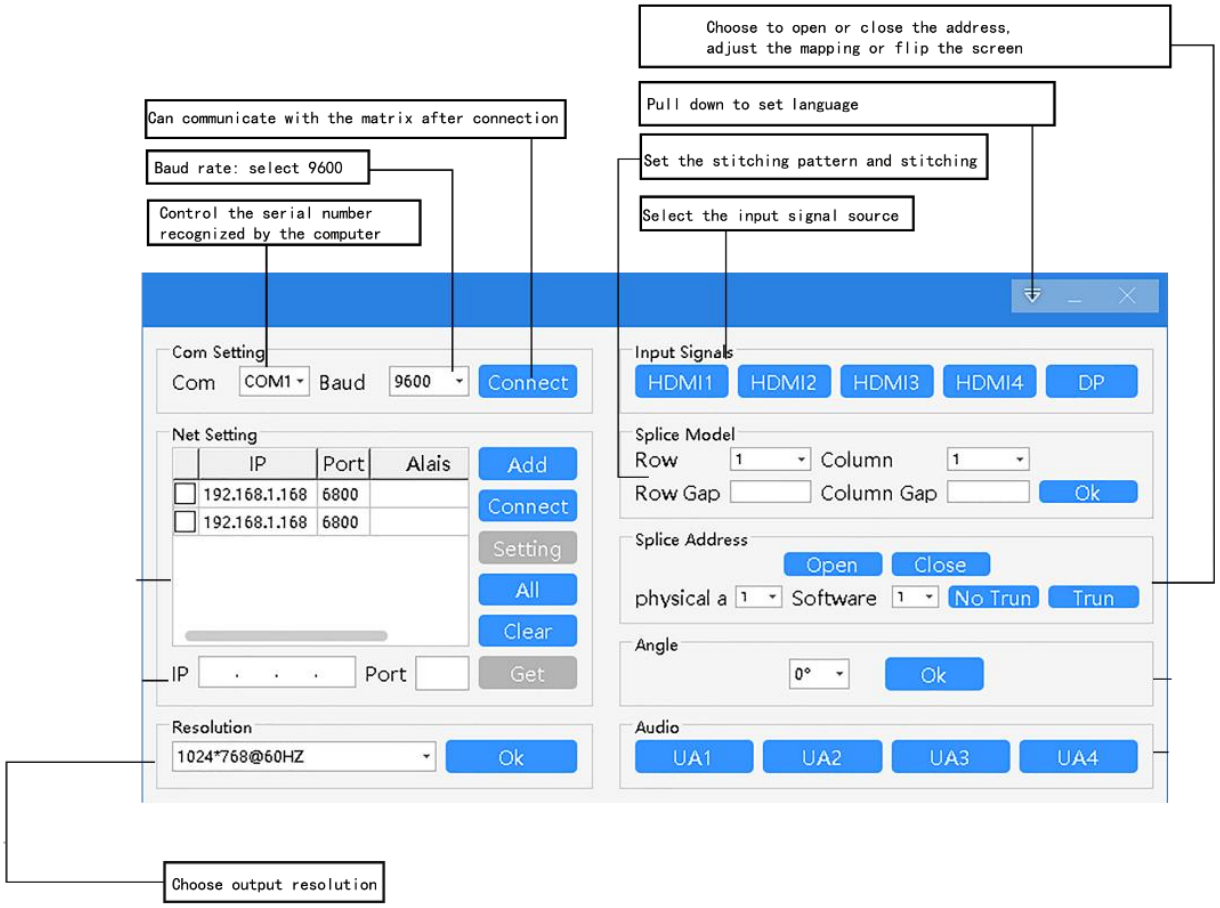
15. Package Contents

- 1× 4-Port Video Wall Controller 4K@60Hz
- 1× Power Supply (DC 12V 3A)
- 1× IR Remote
- 1× IR-Ext Cable
- 1× Phoenix Connector
- 1× Mounting Ears Kits
- 1× User Manual

16. PC Operation via RS-232 (Non-Universal Protocol)

Note: The PC control method described in this section is based on LINK-MI's proprietary protocol and is not compatible with standard or third-party control systems.

- Connect device to PC via RS-232 or network cable
- Use matching COM port in control software
- Ensure proper driver and communication settings



17. Central Control Codes

Serial Port Settings

- Baud rate: 9600
- Data bits: 8
- Stop bit: 1
- No parity
- Communication: Asynchronous, half-duplex

Common Commands

Input Source Switching:

- HDMI input: C5 3A 03 10 01 01 14
- DP input: C5 3A 03 10 01 02 15

Resolution Setting:

- 1920x1080@60Hz: C5 3A 03 13 00 03 18
- 1920x1200@60Hz: C5 3A 03 13 00 04 19

Splicing Mode Switching:

- Splicing mode: C5 3A 05 10 02 NM Vmask Hmask CKS

Parameter Description:

N – Number of vertical screens
M – Number of horizontal screens
Vmask – Vertical edge masking value
Hmask – Horizontal edge masking value
CKS – Checksum byte

Set or Restore Image Rotation

- **Command Format:**
  C5 3A 06 10 04 Rotate_Table PCB_ADDR CKS
- **Rotate_Table (2 bytes):**
  Each bit represents one sub-board or output screen:
  0 = Normal (no rotation)
  1 = 180° rotation

Address Display On / Off

- Address display on: C5 3A 03 10 05 01 18
- Address display off: C5 3A 03 10 05 00 17

18. Common Questions (FAQ)

Q: Why is there no image despite correct connections?
A: Use a high-quality, short cable that supports HD signal transmission.

Q: The image appears distorted after splicing—why?
A: Check and adjust the resolution in the display settings or set a custom resolution via the graphics card.

We strive to keep the information in this manual up to date with the latest product releases. However, there may be a delay in reflecting recent changes. For the most accurate and detailed configuration information, please consult our sales team or refer to the actual device specifications.