

# MD2-4K Dual -Channel Switcher

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## User Manual

V1.0



# Quick Start

## Overview

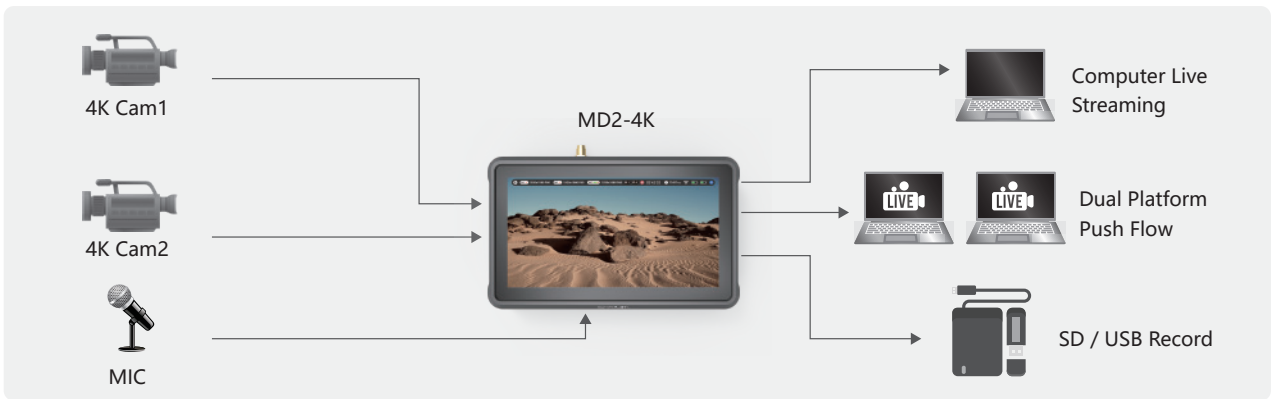
MD2-4K is a 4K all in one streaming switcher capable of dual 4K switching and 4K monitoring. It integrates broadcast switching, professional monitoring, and online streaming functionalities. Featuring a 5.5-inch HD touch screen with a user-friendly interface, it ensures easy operation for both new and experienced users. MD2-4K also supports internal recording, optional UVC output, 4K loop out, and dual backup external battery power, making it suitable for high-quality indoor and outdoor live recording. Its versatility and convenience make it an ideal choice for various live broadcasting and recording scenarios.

## MD2-4K Interface and Functionality Overview

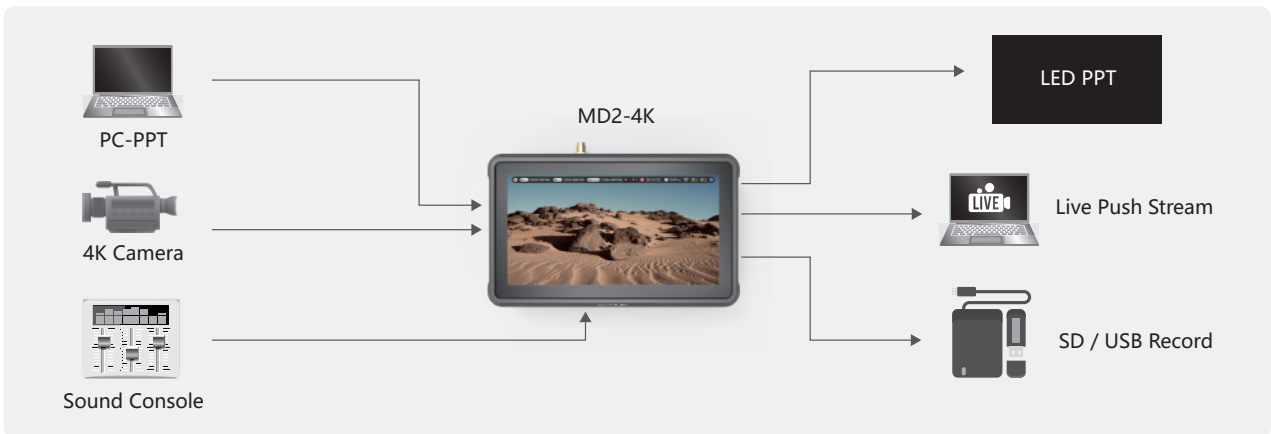


# MD2-4K Interface and Applicable Scenarios

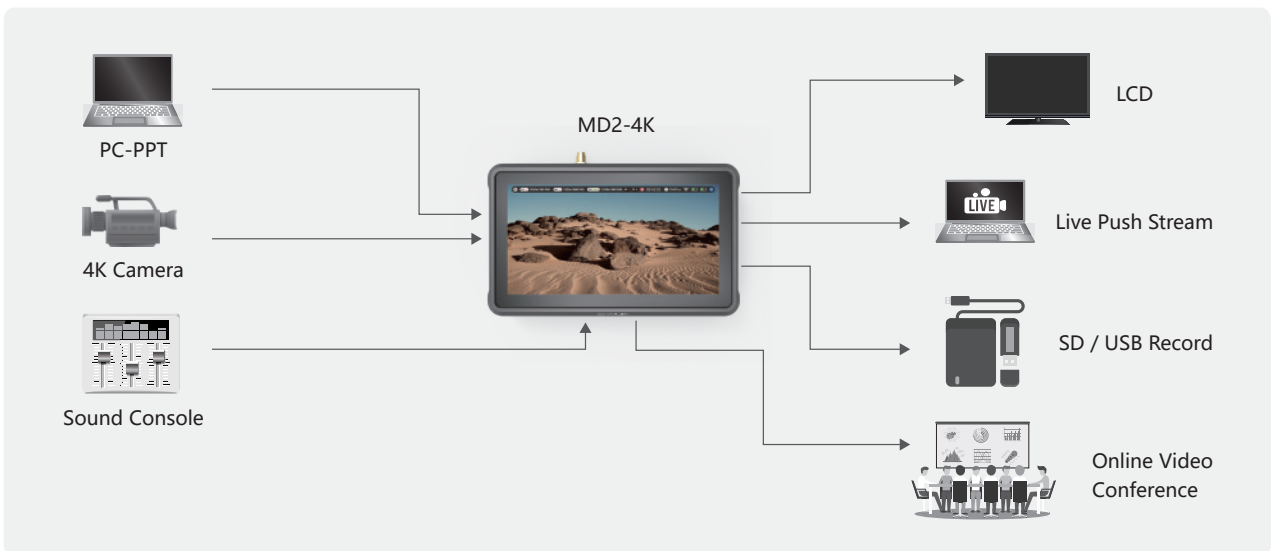
## Scenario 1: Dual 4K Camera Live Streaming and Recording



## Scenario 2: Compact live streaming & recording solution for hybrid events



## Scenario 3: Live Streaming and Recording Integrated with Video Conference (Fixed the UVC Channel as Camera View for Video Conference, While Offering Dual-camera Live Streaming and Recording)



# Operation Mode Introduction

Click on the Information Bar at the top of the Screen to Bring up the Setting Menu.

## 1. Input

Input 1: Signal Source, TP1 (Static Color Bars), TP2 (Dynamic Color Bars)

Input 2: Signal Source, TP1 (Static Color Bars), TP2 (Dynamic Color Bars)

DSK: HDMI1, HDMI2 (click on either to enable chroma keying). Click the three horizontal lines icon to set up chroma keying. Choose HDMI1 or HDMI2, click Picker to move the cursor to the color to be removed, and use Smooth and Similarity to adjust the effect.

## 2. Output

Format: 1080P, 1080P50, 1080P30. Take Effect after Reboot.

AUX: HDMI1, HDMI2, PGM. Select one of the ports (default is PGM). The UVCOUT and HDMIOUT ports will output this.

3D LUT: Supported by HDMI2. Click the icon (three horizontal lines ) to enter the 3D LUT file interface. Click + to import files from SD card.

## 3. Streaming

Streaming 1: Click the QR code on the right, scan the QR code, fill in the streaming address, and select the frame rate and bit-rate.

## 4. System

Set up WiFi: Click the WiFi icon on the left, select the corresponding WiFi, enter the password, and click Auto-join. A green WiFi icon indicates connection, while red indicates no connection (reconnect).

**Brightness Adjustment:** Move Up & Down.

**Language Switch:** Switch between Chinese and English.

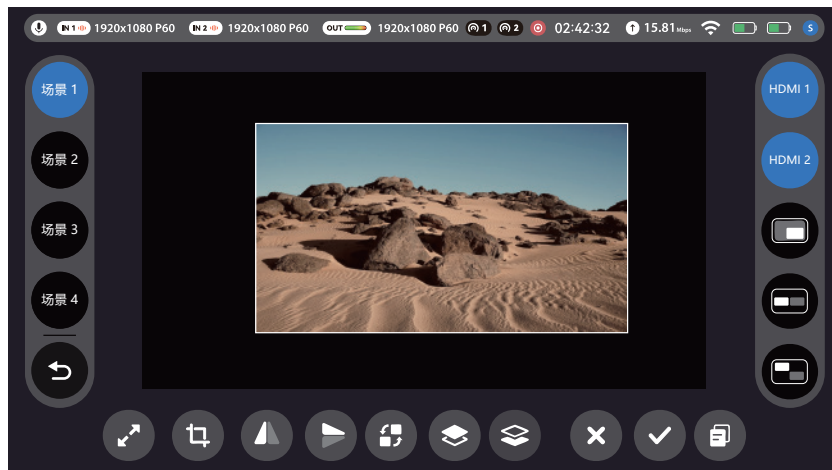
**Fan Control:** Adjust the cooling fan.

**Version, Firmware, Serial Number, Factory Reset**

# Main Interface Function Operations

## 1. Scene Setting

1.1 Click the Scene Settings on the left side to enter the scene editing interface. On the right side of this interface, some preset scenes are provided, which can be used directly. You can also select an empty scene to set up customized scene. When you need to set up a custom scene, select the required input source for editing. In the Scene Settings interface, you can set layer overlays, scaling, moving, horizontal and vertical flipping, layer topping, and scene copying. You can also crop the selected layer. After editing the custom scene, click the "√" to save it. Once saved, you can return to the main interface and recall it with one click on the left side of the main interface.

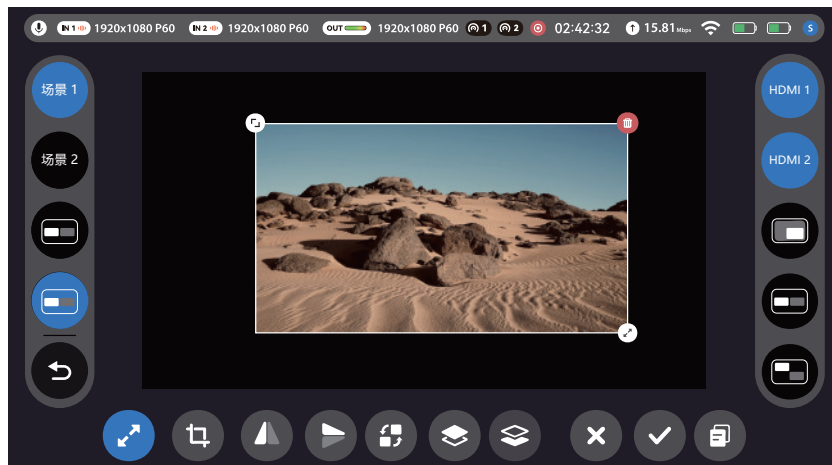


## 2. Layer Editing

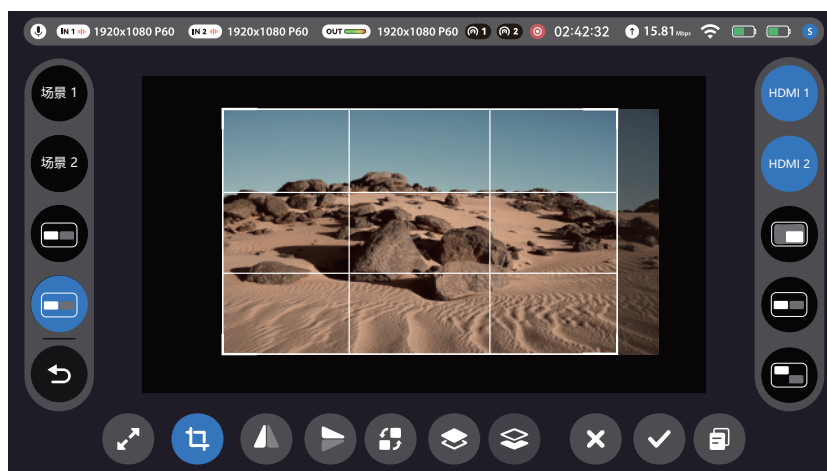
2.1 While setting up a custom scene, you can also edit layers simultaneously. You can select the corresponding HDMI1 and HDMI2 input sources in the top right corner. In the Scene Settings interface, the settings at the bottom are for layer editing. From left to right, these settings include layer scaling, cropping, horizontal flipping, vertical flipping, layer size transformation, layer topping, scene reset, scene save, and duplicating the scene.



2.2 Layer Scaling: Click the layer scaling icon. When the icon is blue, the scaling switch is on. A scaling mark will appear in the bottom right corner of the selected layer to be scaled. Click the mark and slide it in the indicated direction to enlarge or reduce the layer. The top left corner has a full-screen mark; clicking this mark will make the selected layer full-screen.



2.3 Layer Cropping: Turn on the cropping. A nine-grid pattern will appear on the selected cropping layer. Hold the layer's border and crop the layer as needed from the top, bottom, left, and right when cropping. After cropping, you can drag the image within the frame to select the desired portion for display.



2.4 Horizontal and Vertical Flipping: Click the horizontal and vertical flipping icons to flip the selected layer horizontally or vertically.

2.5 Layer Size Switch: Click this icon to swap the sizes of two layers if their sizes are different. If the sizes are the same, their positions will be swapped.

2.6 Layer Topping: You can choose a specific layer to bring it to the top.

### 3. Scene Switching

3.1 Scene switching can be divided into Preview Mode and Cut Mode.

In PWV Mode, you can switch the preview screen on the left side of the main interface. The selected preview scene will be highlighted in green. When you need to switch the preview scene to the program screen, click the scene again, and the scene color will change to red.

In Cut Mode, clicking the desired scene on the left side of the main interface will directly switch it to the output screen, with the scene color turning red. In switch mode interface, you can also choose different transition effects and adjust the transition speed.





## 4. Media Pool Function

4.1 Click "Media" on the right side of the main interface to enter to the settings. In this settings, you can add commonly used LOGO and BG to the shortcut menu on the right side of the main interface for quick access. In the shortcut menu, click the LOGO icon; when the icon turns blue, the LOGO is enabled. Click it again to disable it. When the LOGO is enabled, long-press it in the main interface for about 0.5 seconds to move its position. Besides, long-press the corresponding LOGO icon to enter to the settings. In these settings, you can enlarge, zoom out, rotate, and delete the LOGO. In the media settings interface, you can also add and delete media. Media can be added using an SD card or USB flash drive by placing files in the appropriate folder for import.



## 5. Audio Settings

5.1 Click "Audio" at the bottom of the screen to enter to the settings. In this settings, you can adjust the volume, mode, and select the monitoring signal source.

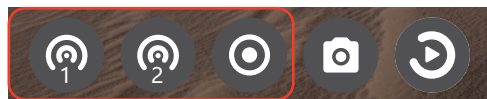


## 6. Recording and Streaming Settings

6.1 Select "Streaming" from the menu to enter to the settings. You can import the streaming address and key by creating a file named MD2\_stream.txt on an SD card and placing it in the root directory of the SD card. The first four lines of the file correspond to Url1, Key1, Url2, and Key2 for importing the streaming address and key. You can also import them using the QR code on the right side (note: QR code import requires the MD2 to be connected to a wireless network). Below the streaming address, you can adjust the frame rate, bit rate, and viewing time for streaming and recording. When recording is enabled, it records the output screen, not the MD2 internal screen.



Clicking the icons as below allows you to enable or disable Stream 1, Stream 2, and close recording.



## 7. Screenshots and Albums

The two buttons in the bottom are for screenshots and Album. The screenshot captures the output screen, not the screen content of the D2. Screenshots are saved to the Album, where you can view both the screenshots and recorded videos.



## 8. Menu Hiding

8.1 Double-click the screen to hide the top menu. Swipe left or right to hide the left and right menu, and swipe up or down to hide the bottom menu.



# Monitor Mode Function Introduction



## Monitor Mode Function Introduction

In the Switch Mode, click the "S" in the top right to switch to the Monitor Mode.

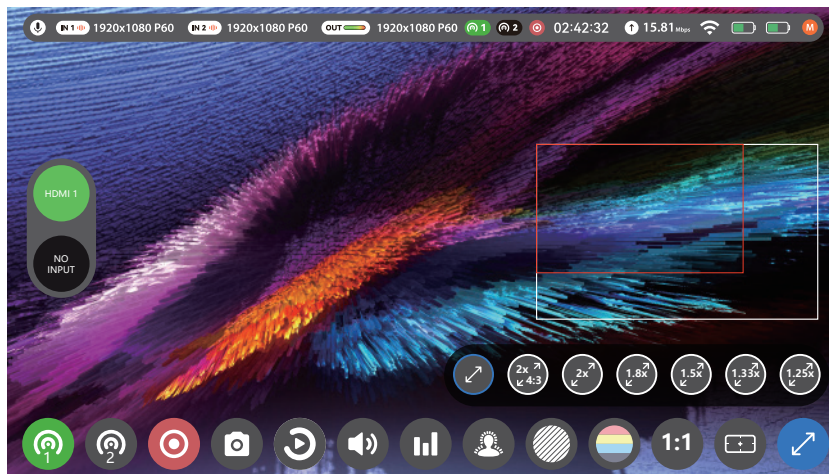
### 1. Output

In the menu, you can set the frame rate, brightness, contrast, and saturation of the output, and you also can add a LUT file to the HDMI2 input for monitoring. At the bottom of the main interface, you can select the required auxiliary tools and monitoring tools.



## 2. Zoom Monitoring Tool

To enlarge an image, the indicator box will show the screen position where you are viewing . You can move the magnified position by dragging on the screen or selecting part of the indicator box.



## 3. Brightness Waveform Monitor

Brightness Waveform Monitor are a great way to see the dynamic range and you can clearly see which areas of the image are overexposed and which areas are underexposed. When using Log Mode to shoot contrast images, you can perfectly monitor the brightness of the image to get the correct exposure. In the original monitoring mode and LUT monitoring mode, the brightness waveform range is between 1–100. When the camera output is turned on for HDR monitoring, the brightness waveform range is between 0–800. Through the numerical reference of the brightness waveform chart, the exposure level of the image can be judged rationally and correctly.



## 4. RGB Waveform Monitor

The RGB waveform monitor is used to monitor the levels of red, green, and blue colors from input sources. The three color channels are displayed side by side, and it can be used to observe white balance. By shooting the camera at a white object, if the camera's white balance is correctly set, the levels of the red, green, and blue channels should remain consistent. It can also be used to observe color luminance and match scene color difference. By analyzing the display status of the RGB waveform monitor, you can determine the distribution of color luminance. If the image is biased towards red, the blue waveform will be low, and vice versa. Observing the color effect from the monitor can also appear warmer or cooler.



## 5. Vector Scope

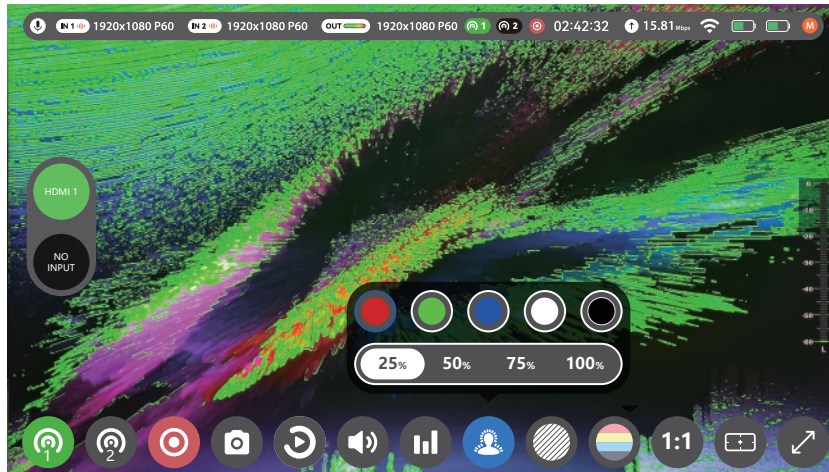
The vector scope displays true color information of hue, vectors, and color intensity (measured from the center to outwards) in vector phase display. Setting the camera's white and black point is crucial for identifying low saturation areas and deciding whether color balance is needed when matching previous scene shots.





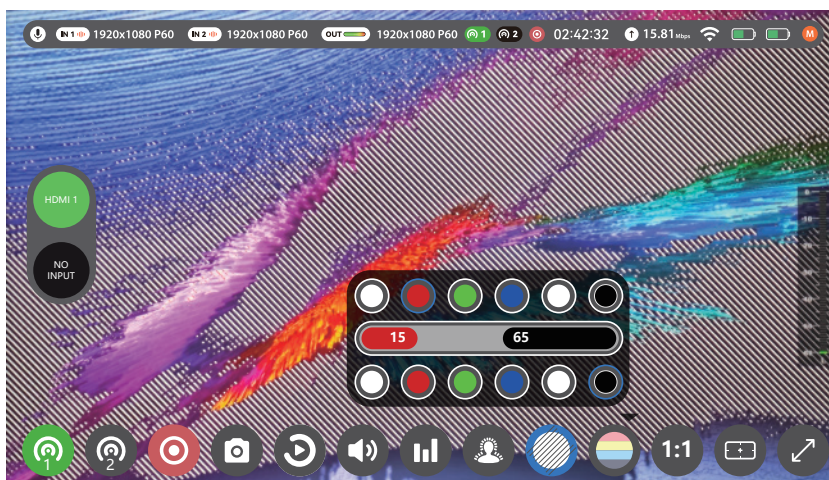
## 6. Peak Focus

Peak focus allows you to accurately focus during recording. Areas in focus are highlighted with color lines. It can display on the original color video, grayscale image, or only show peaks of selected icons.



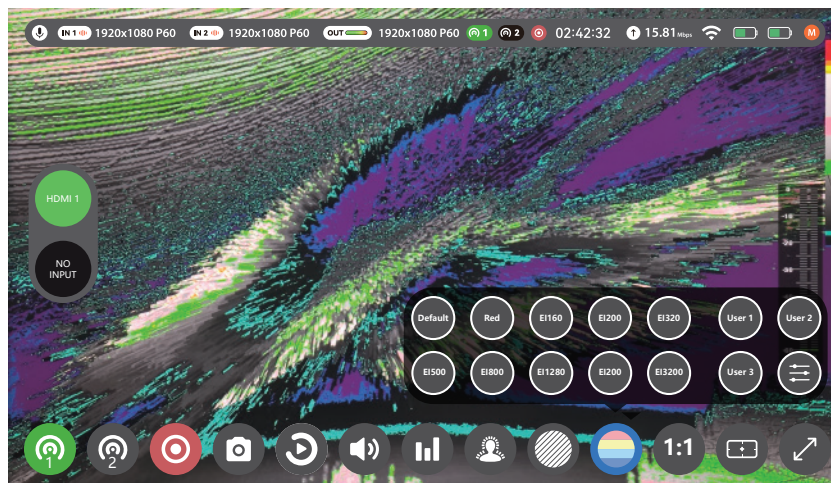
## 7. Zebra Stripes

Through the zebra pattern, cinematographers can intuitively understand which parts of the frame may be overexposed, allowing adjustment of aperture, shutter speed, or other shooting parameters for more accurate exposure effects. For instance, if zebra patterns appear near to overexposure, the cinematographer may consider reducing the aperture or taking other measures to lower exposure and preserve detailed image content.



## 8. False Color

False color represents different exposures in the image with different colors. It does not only show the overexposed areas in the image but provides a more complete exposure value and exposure range.



## 9. Film Mask

We provide film masks with different aspect ratios for users to use, and have also added a nine-grid frame to assist users in their work.



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