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## Novastar MCTRL4K

# Novastar MCTRL4K LED Display Controller User Manual

Model: MCTRL4K

## 1. INTRODUCTION

The Novastar MCTRL4K is a high-performance LED display controller designed for real 4K@60Hz video processing. It offers advanced features for large LED screen applications, supporting ultra-high definition resolutions and various input/output interfaces. This manual provides essential information for the proper setup, operation, and maintenance of your MCTRL4K controller.

Key features include:

- Supports 4K UHD resolution up to 4096×2160@60Hz, with a maximum width of 8K.
- Advanced HDR10/HLG support for enhanced contrast, subtle shading, and a broadened color spectrum.
- Equipped with 16-channel Neutrik Gigabit Ethernet outputs and 4-channel optical fiber outputs for robust connectivity.
- Comprehensive video input interfaces: 1x DisplayPort 1.2, 1x HDMI 2.0, and 2x dual-link DVI.
- Designed for low latency performance in LED display applications.

## 2. UNBOXING AND PACKAGE CONTENTS

Carefully unpack the Novastar MCTRL4K controller and verify all components are present and undamaged. The standard package includes the MCTRL4K unit, an American-Standard power plug, and various connection cables.



Figure 2.1: Novastar MCTRL4K controller with its main packaging box and accessory box.



Figure 2.2: Novastar MCTRL4K controller unit with included cables and documentation.



Figure 2.3: Contents of the accessory box including various connection cables.

### 3. SETUP INSTRUCTIONS

Follow these steps to set up your Novastar MCTRL4K LED Display Controller.

#### 3.1 Physical Installation

The MCTRL4K is designed for rack mounting. Ensure adequate ventilation around the unit to prevent overheating.

#### 3.2 Connecting Power

1. Ensure the power switch on the rear panel is in the OFF position.
2. Connect the provided American-Standard power plug to the AC input on the rear panel of the MCTRL4K.
3. Plug the other end of the power cable into a grounded power outlet.

#### 3.3 Input and Output Connections

The MCTRL4K offers a variety of input and output ports. Refer to the diagram below for port identification.



Figure 3.1: Rear panel of the Novastar MCTRL4K with input (DP1.2, HDMI2.0, DVI) and output (Ethernet, Optical Fiber) ports.

**1. Video Input:** Connect your video source (e.g., computer, media player) to the MCTRL4K using one of the following ports:

- DisplayPort 1.2 (DP1.2)
- HDMI 2.0
- Dual-link DVI (DVI-D 1 or DVI-D 2)

*Note:* Ensure your source device is configured to output a resolution compatible with the MCTRL4K's capabilities (up to 4K@60Hz).

**2. LED Display Output:** Connect the MCTRL4K to your LED display panels using the output ports.

- **Ethernet Outputs:** Use standard Ethernet cables to connect the 16 Neutrik Gigabit Ethernet outputs to your LED receiving cards.
- **Optical Fiber Outputs:** For long-distance transmission or high-bandwidth requirements, use optical fiber cables with the 4-channel optical fiber outputs.

**3. Control Connection:**

- **USB Control:** Connect a USB cable from your computer to the USB IN port on the MCTRL4K for configuration and control via Novastar software.
- **Ethernet Control:** Connect an Ethernet cable from your computer or network switch to the CONTROL ETHERNET port for network-based control.

## 4. OPERATING INSTRUCTIONS

Once all connections are secure, you can power on and operate the MCTRL4K.

### 4.1 Powering On/Off

1. To power on, flip the power switch on the rear panel to the ON position. The front panel display will illuminate.
2. To power off, flip the power switch to the OFF position.

### 4.2 Basic Configuration

Initial configuration of the LED display parameters (e.g., screen resolution, mapping, brightness) is typically performed using Novastar's control software on a connected computer. Refer to the software's user guide for detailed instructions on:

- Screen configuration and mapping.
- Input source selection and management.
- Brightness, contrast, and color adjustments.
- HDR10/HLG mode activation and settings.



Figure 4.1: Front panel of the Novastar MCTRL4K, featuring the display screen and control knob for direct adjustments.

### 4.3 Input Source Switching

Input sources can be switched via the control software or, for basic functions, potentially through the front panel controls (refer to the device's specific firmware interface for exact navigation).

### 4.4 HDR10/HLG Activation

To utilize the HDR10/HLG features, ensure your video source supports HDR output and activate the corresponding settings within the Novastar control software. This will enable the controller to process and display content with high dynamic range, resulting in improved visual quality.

## 5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your MCTRL4K controller.

- **Cleaning:** Regularly clean the exterior of the unit with a soft, dry cloth. Avoid using liquid cleaners or solvents. Ensure ventilation openings are free from dust and debris.
- **Ventilation:** Maintain clear airflow around the unit. Do not block ventilation holes.
- **Firmware Updates:** Periodically check the Novastar official website for firmware updates. Keeping the firmware updated can improve performance, add features, and resolve issues.
- **Cable Management:** Ensure all cables are securely connected and properly managed to prevent accidental disconnections or damage.

## 6. TROUBLESHOOTING

This section addresses common issues you might encounter with the MCTRL4K controller.

### 6.1 No Power

- Check if the power cable is securely connected to both the MCTRL4K and the power outlet.
- Verify that the power outlet is functional.
- Ensure the power switch on the rear panel is in the ON position.

### 6.2 No Video Output on LED Display

- Confirm that the video source is correctly connected to an input port (DP1.2, HDMI2.0, or DVI) and is active.
- Check the connection between the MCTRL4K's Ethernet/Optical Fiber outputs and the LED receiving cards.
- Verify the LED display's power and operational status.
- Ensure the screen configuration and mapping in the Novastar control software are correct.
- Check if the input resolution from the source matches the controller's capabilities and the LED display's configuration.

### 6.3 Control Software Cannot Connect to MCTRL4K

- If using USB, ensure the USB cable is connected to the USB IN port and the correct drivers are installed on your computer.
- If using Ethernet, verify the network cable connection and IP address settings for both the computer and the MCTRL4K.
- Temporarily disable any firewall software on your computer that might be blocking the connection.

### 6.4 Image Quality Issues (e.g., flickering, incorrect colors)

- Check the quality of the input video source and cables.
- Verify the color depth and refresh rate settings in the control software.
- If using HDR10/HLG, ensure both the source and the LED display are properly configured for HDR.
- Perform a screen calibration using the Novastar control software.

## 7. SPECIFICATIONS

The following table details the technical specifications of the Novastar MCTRL4K LED Display Controller.

Feature	Specification
Model Number	MCTRL4K
Loading Capacity	4K UHD (4096×2160@60Hz), Max width 8K
Video Input Interfaces	1x DisplayPort 1.2, 1x HDMI 2.0, 2x Dual-link DVI
Output Interfaces	16x Neutrik Gigabit Ethernet, 4x Optical Fiber
Control Interfaces	USB, Ethernet
HDR Support	HDR10/HLG
Graphics Coprocessor	NVIDIA GPU integrated
Graphics RAM Size	4 GB
Item Weight	15.11 pounds (6.85 kg)
Package Dimensions	21.83 x 17.65 x 8.75 inches (55.45 x 44.83 x 22.23 cm)
Manufacturer	Novastar

## 8. WARRANTY AND SUPPORT

For warranty information, please refer to the warranty card included with your product or visit the official Novastar website. Novastar provides technical support for its products.

- **Online Support:** Visit the Novastar official website for FAQs, documentation, and support resources.
- **Contact Support:** For direct technical assistance, contact Novastar customer service through the channels provided on their website.