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MCTRL R5

LED Display Controller



Specifications

1 Overview

The MCTRL R5 is the first LED display controller of NovaStar that supports display rotation. A single MCTRL R5 features a loading capacity of up to 3840×1080@60Hz. It supports any custom resolutions within this capacity, meeting the on-site configuration requirements of ultra-long or ultra-wide LED displays.

Working with the A8s or A10s Plus receiving card, the MCTRL R5 supports free screen configuration in SmartLCT and allows for display rotation at any angle to present a variety of images and bring an amazing visual experience to users.

The MCTRL R5 can be mainly used in rental and fixed applications, such as concerts, live events, monitoring centers, Olympic Games and various sports centers.

2 Features

- 1 × 6G-SDI, 1 × dual link D-DVI and 1 × HDMI 1.4 inputs, pixel capacity of each up to 4,140,000 pixels
- 8 × Gigabit Ethernet and 2 × fiber optic outputs
- Display rotation at any angle
- Innovative architecture to enable smart configuration and shorter stage preparation time
- NovaStar G4 engine to enable a stable and smooth display with good sense of depth and no flickering or scanning lines
- Supports the new generation of NovaStar pixel level calibration technology, which is fast and efficient.
- Supports quick and easy manual adjustment of screen brightness.
- Supports firmware update via USB port on the front panel.
- Multiple controllers can be cascaded for uniform control.

Table 2-1 Video formats supported

Input Connector	Features		
	Bit Depth	Sampling Format	Maximum Input Resolution
HDMI1.4	8 bit	RGB 4:4:4 YCbCr 4:4:4 YCbCr 4:2:2	3840×1080@60Hz
Dual link DVI	8 bit	RGB 4:4:4	3840×1080@60Hz
6G-SDI	Maximum input resolution: 3840×1080@60Hz Note: Do not support input resolution settings or interlaced signals.		

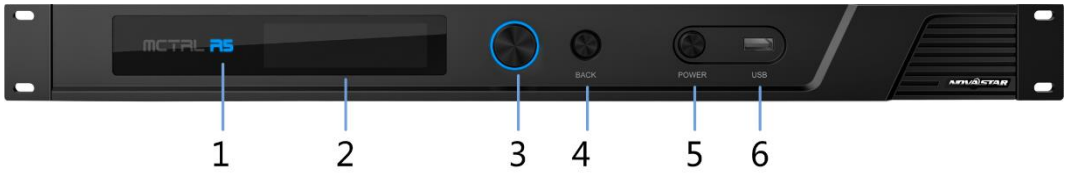
Table 2-2 Limitations on functions

Function	Limitation	Mutually Exclusive Function
Rotation	• The screen must be configured on the MCTRL R5 before rotation setting in LCD menu.	Calibration

	• The screen must be configured in SmartLCT before rotation setting in SmartLCT.	

3 Appearance

Front Panel



No.	Name	Description
1	R5 indicator	Blue: The device is operating normally Red: The device has an alarm. Orange: The device has no signal. Breathing blue: The device is in standby mode.
2	OLED screen	Display the menu.
3	Knob	• Press to enter a menu or confirm an option. • Rotate to select a menu item or adjust a menu parameter. • Hold down the knob and **BACK** button simultaneously for 5s to lock or unlock all the buttons.
4	BACK	Press to go back to the previous menu.
5	POWER	Standby button
6	USB	Insert USB drive to update firmware.

Rear Panel



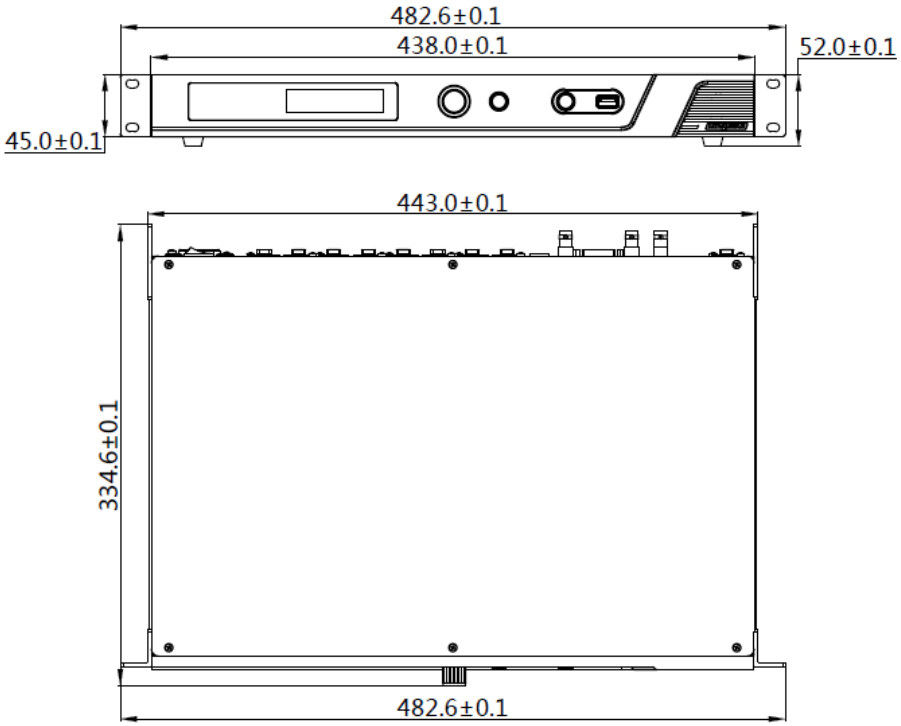
Input	
SDI	• 6G-SDI input, resolutions up to 3840×1080@60Hz

	• Support progressive input only Note: Do not support input resolution settings.
HDMI	• HDMI1.4 input, with a maximum resolution of 3840×1080@60Hz and minimum resolution of 800×600@24Hz • Pixel capacity: 4,140,000 pixels • Custom resolution supported Resolution limit with maximum width: 3840×1080@60Hz Resolution limit with maximum height: 800×3840@60Hz • HDCP 1.4 compliant • Supported standard resolutions: 1024×768@(24/25/30/48/50/60/72/75/85/100/120)Hz 1280×720@(24/25/30/48/50/60/72/75/85/100/120)Hz 1280×1024@)24/25/30/48/50/60/72/75/85/100/120)Hz 1366×768@(24/25/30/48/50/60/72/75/85/100/120)Hz 1440×900@(24/25/30/48/50/60/72/75/85/100/120)Hz 1536×1536@(24/25/30/48/50/60/72/75/85/100)Hz 1600×1200@(24/25/30/48/50/60/72/75/85/100/120)Hz 1920×1080@(24/25/30/48/50/60/72/75/85/100/120)Hz 1920×1200@(24/25/30/48/50/60/72/75/85/100)Hz 2048×640@(24/25/30/48/50/60/72/75/85/100/120)Hz 2048×1152@(24/25/30/48/50/60/72/75/85/100)Hz 2304×1152@(24/25/30/48/50/60/72/75/85/100)Hz 2560×816@(24/25/30/48/50/60/72/75/85/100/120)Hz 2560×1600@(24/25/30/48/50/60)Hz 3840×1080@(24/25/30/48/50/60)Hz
D-DVI	• Dual link DVI input, with a maximum resolution of 3840×1080@60Hz and minimum resolution of 800×600@24Hz • Pixel capacity: 4,140,000 pixels • Custom resolution supported Resolution limit with maximum width: 3840×1080@60Hz Resolution limit with maximum height: 800×3840@60Hz • Supported standard resolutions: 1024×768@(24/25/30/48/50/60/72/75/85/100/120)Hz 1280×720@(24/25/30/48/50/60/72/75/85/100/120)Hz 1280×1024@(24/25/30/48/50/60/72/75/85/100/120)Hz 1366×768@(24/25/30/48/50/60/72/75/85/100/120)Hz 1440×900@(24/25/30/48/50/60/72/75/85/100/120)Hz 1536×1536@(24/25/30/48/50/60/72/75/85)Hz 1600×1200@(24/25/30/48/50/60/72/75/85/100/120)Hz 1920×1080@(24/25/30/48/50/60/72/75/85/100)Hz 1920×1200@(24/25/30/48/50/60/72/75/85/100)Hz

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Output	
RJ-45 Gigabit Ethernet	• 8 × RJ-45 Gigabit Ethernet outputs • Maximum pixel capacity of each port: 650,000 pixels • Do not support audio output. • Support redundancy between Ethernet ports.
OPT1–2	• 10G optical ports – Single-mode twin-core fiber: Support LC optical connectors; wavelength: 1310 nm; transmission distance: 10 km; OS1/OS2 recommended. – Dual-mode twin-core fiber: Support LC optical connectors; wavelength: 850 nm; transmission distance: 300 m; OM3/OM4 recommended. • The maximum loading capacity of a single optical port equals to that of all the 8 Ethernet ports. • 2 × OPT inputs/outputs – OPT1 transmits data of Ethernet ports 1–8. – OPT2 is a duplicate channel of OPT1.
Control	
ETHERNET	Fast Ethernet port to connect to PC. Support TCP/IP.
USB IN	Input port for cascading devices, or connecting to PC
USB OUT	Output port for cascading devices. Up to 8 MCTRL R5 units can be cascaded.
GENLOCK	
IN	GENLOCK input connector • GENLOCK type: Blackburst • Input GENLOCK sync signal to ensure synchronization and same refresh rate between the output signals of cascaded MCTRL R5 units and the external Genlock input signal.
LOOP	GENLOCK loop output connector. Up to 8 MCTRL R5 units can be cascaded.
Power	
Power supply	AC 100 V–240 V, 50/60Hz
Power switch	ON/OFF

Note:
Type-A USB port is prohibited from being connected to the control computer directly.

4 Dimensions



Unit: mm

5 Specifications

Electrical Specifications	Input voltage	AC 100 V–240 V, 50/60 Hz
	Rated power consumption	25 W
Operating Environment	Temperature	-20°C–60°C
	Humidity	0% RH–90% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 334.6 mm × 52.0 mm
	Weight	4.3 kg
Packing Information	Carrying case	530 mm × 370 mm × 140 mm, white cardboard box
	Packing box	550 mm × 400 mm × 175 mm, craft paper box
	Accessory box	405 mm × 290 mm × 48 mm, white cardboard box
	Accessories	1 × power cord 1 × Ethernet cable 1 × USB cable 1 × HDMI cable 1 × DVI cable
	Packing rules	The product and accessory box (containing related cables) packed in the carrying case and the carrying case packed in the packing box
Certifications	FCC, RoHS, UL&CUL, EMC, LVD, CB, IC	