

# MCTRL660 PRO

## Independent Controller



Specifications

## Change History

Document Version	Release Date	Description
V1.4.0	2022-03-31	<ul style="list-style-type: none"> <li>Optimized the document content.</li> <li>Changed the document style.</li> </ul>
V1.3.0	2019-03-04	<ul style="list-style-type: none"> <li>Added the backup &amp; restore function for Web control.</li> <li>Changed the location of color depth function on Web control UI.</li> <li>Added the following functions for home screen:               <ul style="list-style-type: none"> <li>The standby button will be disabled after the home screen is locked.</li> <li>Display the color depth of video source.</li> <li>Display the custom sending card name.</li> </ul> </li> <li>Deleted the deep color loop mode adjustment function.</li> <li>Changed the value range of the hue parameter in the image settings to -180 to +180.</li> </ul>
V1.2.0	2019-01-25	Updated the appearance and dimensions diagrams.
V1.1.0	2018-12-03	<ul style="list-style-type: none"> <li>Optimized the description of ultra-high color depth input.</li> <li>Optimized the description of individual gamma adjustment for RGB.</li> <li>Optimized the description of low latency.</li> </ul>
V1.0.0	2018-09-26	First release

## Introduction

The MCTRL660 PRO is a professional controller developed by NovaStar. A single controller supports resolutions up to 1920x1200@60Hz. Supporting image mirroring, this controller can present a variety of images and bring an amazing visual experience to users.

The MCTRL660 PRO can work as a sending card and a fiber converter, and supports switching between the two modes, meeting more diversified market demands.

The MCTRL660 PRO is stable, reliable and powerful, dedicated to providing users with an ultimate visual experience. It can be mainly used in the rental and fixed installation applications, such as concerts, live events, security monitoring, Olympic Games, various sports centers, and much more.

## Certifications

FCC, CE, RoHS, IC

**If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.**

## Features

- Inputs
  - 1x 3G-SDI
  - 1x HDMI 1.4a
  - 1x SL-DVI
- 6x Gigabit Ethernet outputs, 2x optical outputs
- 8-bit, 10-bit and 12-bit inputs
- Image mirroring
  - Multi-angle image mirroring options allow for more cool and dazzling stage effects.
- Low latency
  - When low latency and input source sync are enabled, and cabinets are connected vertically, the delay between the input source and receiving card can be reduced to one frame.

- Individual gamma adjustment for RGB

For 10-bit or 12-bit inputs, this function can individually adjust the red gamma, green gamma and blue gamma to effectively control image non-uniformity in low grayscale conditions and white balance offset, allowing for a more realistic image.

- Pixel level brightness and chroma calibration

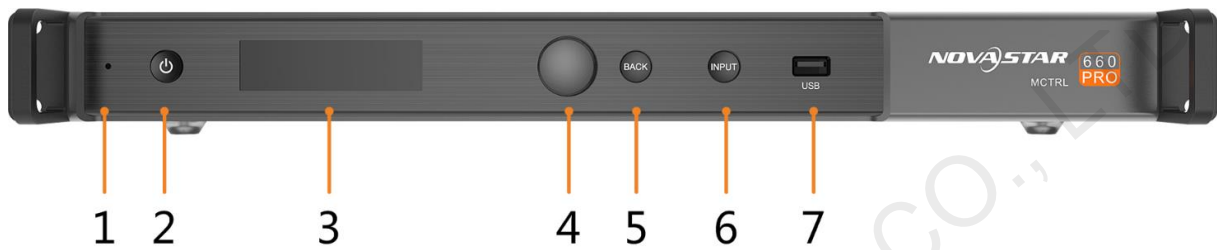
Work with NovaStar's high-precision calibration system to calibrate the brightness and chroma of each pixel, effectively removing brightness

differences and chroma differences, and enabling high brightness consistency and chroma consistency.

- Input monitoring
- One-click backup and restore
- Screen configuration on web
- Cascading of up to 8 MCTRL660 PRO devices

## Appearance

### Front Panel



No.	Name	Description
1	Running Indicator	<ul style="list-style-type: none"> <li>• Green: The device is running normally.</li> <li>• Red: Standby</li> </ul>
2	Standby Button	Power on or off the device.
3	OLED Screen	Display the device status, menus, submenus and messages.
4	Knob	Select menus, adjust parameters, and confirm operations.
5	BACK	Go back to the previous menu or exit the current operation.
6	INPUT	Used to select the input
7	USB	Used to update the firmware

### Rear Panel

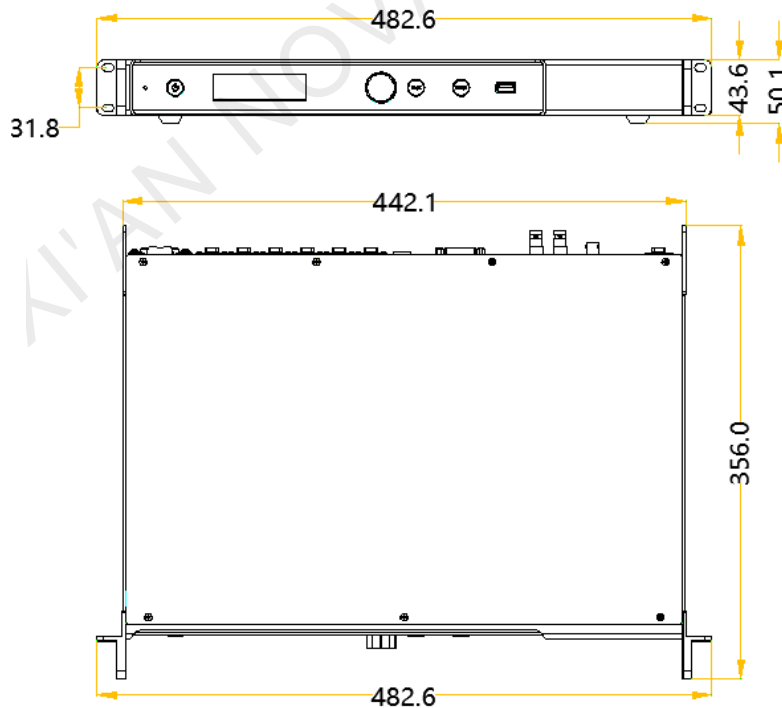


Type	Name	Description
Input	DVI IN	1x SL-DVI input <ul style="list-style-type: none"> <li>• Max resolution: 1920x1200@60Hz</li> <li>• Min resolution: 800x600@60Hz</li> <li>• Custom resolutions supported                             <ul style="list-style-type: none"> <li>Max width: 3840 pixels (3840x600@60Hz)</li> <li>Max height: 3840 pixels (800x3840@30Hz)</li> </ul> </li> <li>• HDCP 1.3 compliant</li> <li>• Supported standard resolutions:</li> </ul>

		<p>1024x768@(24/30/48/50/60/72/75/85/100/120)Hz  1280x1024@(24/30/48/50/60/72/75/85)Hz  1366x768@(24/30/48/50/60/72/75/85/100)Hz  1440x900@(24/30/48/50/60/72/75/85)Hz  1600x1200@(24/30/48/50/60)Hz  1920x1080@(24/30/48/50/60)Hz  1920x1200@(24/30/48/50/60)Hz  2560x960@(24/30/48/50)Hz  2560x1600@(24/30)Hz</p> <ul style="list-style-type: none"> <li>Do NOT support interlaced signal input.</li> </ul>
	HDMI IN	<p>1x HDMI 1.4a input</p> <ul style="list-style-type: none"> <li>Max resolution: 1920x1200@60Hz</li> <li>Min resolution: 800x600@60Hz</li> <li>Custom resolutions supported <ul style="list-style-type: none"> <li>Max width: 3840 pixels (3840x600@60Hz)</li> <li>Max height: 3840 pixels (800x3840@30Hz)</li> </ul> </li> <li>HDCP 1.4 compliant</li> <li>Supported standard resolutions: <ul style="list-style-type: none"> <li>1024x768@(24/30/48/50/60/72/75/85/100/120)Hz</li> <li>1280x1024@(24/30/48/50/60/72/75/85)Hz</li> <li>1366x768@(24/30/48/50/60/72/75/85/100)Hz</li> <li>1440x900@(24/30/48/50/60/72/75/85)Hz</li> <li>1600x1200@(24/30/48/50/60)Hz</li> <li>1920x1080@(24/30/48/50/60)Hz</li> <li>1920x1200@(24/30/48/50/60)Hz</li> <li>2560x960@(24/30/48/50)Hz</li> <li>2560x1600@(24/30)Hz</li> </ul> </li> <li>Do NOT support interlaced signal input.</li> </ul>
	3G-SDI IN	<ul style="list-style-type: none"> <li>SMPTE ST 425-1 Level A &amp; B, SMPTE ST 274, ST 296, ST 295 compliant</li> <li>Max input resolution: 1920x1080@60Hz</li> </ul> <p>Note: Do NOT support input resolution and bit depth settings.</p>
Output	RJ45x6	<p>6x RJ45 Gigabit Ethernet ports</p> <ul style="list-style-type: none"> <li>Max loading capacity per port: <ul style="list-style-type: none"> <li>8bit: 650,000 pixels</li> <li>10/12bit: 325,000 pixels</li> </ul> </li> <li>Support redundancy between Ethernet ports.</li> </ul>
	OPT1 OPT2	<p>2x 10G optical ports</p> <ul style="list-style-type: none"> <li>Single-mode twin-core fiber: Support LC optical connectors; wavelength: 1310 nm; transmission distance: 10 km; OS1/OS2 recommended</li> <li>Dual-mode twin-core fiber: Support LC optical connectors; wavelength: 850 nm; transmission distance: 300 m; OM3/OM4 recommended</li> <li>The maximum loading capacity of a single optical port equals to that of 6 Gigabit Ethernet ports.</li> <li>2x OPT inputs/outputs</li> </ul>

		<p>OPT1 is the main input or output port and corresponds to the 6 Gigabit Ethernet ports</p> <p>OPT2 is the backup input or output port of OPT1.</p> <ul style="list-style-type: none"> <li>In sending card mode, either the 2 optical ports or the 6 Gigabit Ethernet ports can work as output ports to output the same image.</li> <li>In fiber converter mode, when the optical ports work as input ports, the 6 Gigabit Ethernet ports work as output ports. When the 6 Gigabit Ethernet ports work as input ports, the optical ports work as output ports.</li> </ul>
	DVI LOOP	DVI loop through
	HDMI LOOP	HDMI loop through. Support HDCP 1.3 loop through encryption.
	3G-SDI LOOP	SDI loop through
Control	ETHERNET	Connect to the control computer.
	USB IN-OUT	<ul style="list-style-type: none"> <li>IN: 1x type-B USB 2.0, used as the input port to cascade devices or connect to PC for device debug</li> <li>OUT: 1x type-A USB 2.0, used as the output port to cascade devices. Up to 8 devices can be cascaded.</li> </ul>
	GENLOCK IN-LOOP	<p>A pair of Genlock signal connectors. Support Bi-Level, Tri-Level and Black burst.</p> <ul style="list-style-type: none"> <li>IN: Accept the sync signal.</li> <li>LOOP: Loop the sync signal.</li> </ul>
Power	100 V–240 V AC	
Power switch	ON/OFF	

## Dimensions



Tolerance:  $\pm 0.3$  Unit: mm

## Specifications

Electrical Specifications	Input voltage	100 V–240 V AC
	Rated power consumption	20 W
Operating Environment	Temperature	–20°C to +60°C
	Humidity	10% RH to 90% RH, non-condensing
Storage Environment	Temperature	–20°C to +70°C
	Humidity	10% RH to 90% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 356.0mm × 50.1mm
	Weight	4.6 kg
Packing Information	Packing box	550 mm × 440 mm × 175 mm
	Carrying case	530 mm × 140 mm × 410 mm
	Accessories	<ul style="list-style-type: none"> <li>• 1x Power cord</li> <li>• 1x Ethernet cable</li> <li>• 1x USB cable</li> <li>• 1x HDMI cable</li> <li>• 1x DVI cable</li> </ul>

## Video Source Features

Input	Features		
	Bit Depth	Sampling Format	Max Input Resolution
HDMI 1.4a	8bit	RGB 4:4:4	1920×1200@60Hz
	10bit/12bit	YCbCr 4:4:4	1920×1080@60Hz
Single-link DVI	8bit	YCbCr 4:2:2	1920×1200@60Hz
	10bit/12bit	YCbCr 4:2:0	1920×1080@60Hz
3G-SDI	Max input resolution: 1920×1080@60Hz <ul style="list-style-type: none"> <li>• Do NOT support input resolution and bit depth settings.</li> <li>• The gamma value is adjustable for 8-bit inputs and not adjustable for 10-bit or 12-bit inputs.</li> </ul>		

The amount of power consumption may vary depending on various factors such as product settings, usage, and environment.

## Notes and Cautions

### Notes for Battery

- The battery is not intended to be replaced.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion.

- Leaving a battery in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

### FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### Others

This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

This product can only be placed horizontally. Do not mount vertically or upside-down.

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