Skyco MEDIA TECHNOLOGIES
CAPTIVATING VISUAL BRILLIANCE

MCTRL660 PRO

LED Display Controller

NOVASTAR

Introduction

The MCTRL660 PRO is a professional controller developed by NovaStar. A single MCTRL660 PRO has a loading capacity of up to 1920×1200@60Hz. It allows users to customize resolutions to configure ultra-large screens with ultra-width or ultra-height.

Features:

The MCTRL660 PRO has various video connectors:

- Input connectors: 1 × 3G-SDI, 1 × HDMI 1.4a, 1 × single-link DVI.
- Output connectors: 6 × Gigabit Ethernet port, 2 × 10G optical port.
- Loop output connectors: 1 × 3G-SDI LOOP, 1 × HDMI LOOP, 1 × DVI LOOP.

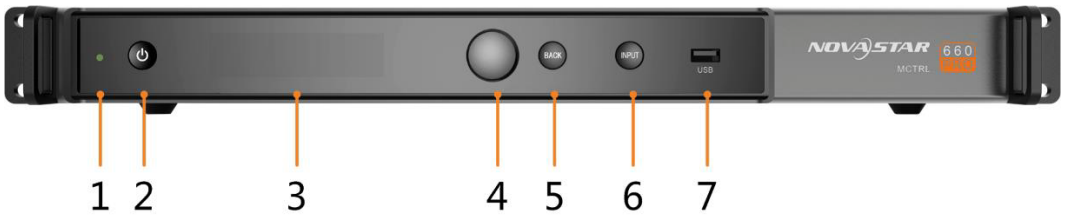
The MCTRL660 PRO has many industry-leading advanced technologies:

- Input of ultra-high color depths, such as 10-bit/12-bit 4:4:4, with input resolutions up to 1920×1080@60Hz, increasing color expression capabilities by 4096 times compared to 8-bit inputs, and presenting images with rich and delicate colors, smoother transitions, as well as clearer details.
- Independent Gamma adjustment of RGB, effectively controlling image non-uniformity under low grayscale and white balance offset to improve image quality
- A low latency of less than 1 frame (≤ 10 lines)
- Dual working modes: working as sending card and fiber converter
- One-click backup and recovery, quickly recovering previous screen configurations to deal with sudden on-site failure.
- Image flipping, making stage effect more cool and dazzling
- Auto LED screen configuration
- Web control
- Pixel level brightness and chroma calibration
- Monitoring of inputs
- Multiple MCTRL660 PRO units can be cascaded.

Video Source Features

<table>
<tr><td rowspan="2">Input Connector</td><td colspan="3">Features</td></tr>
<tr><td>Color Depth</td><td>Sampling Format</td><td>Resolution</td></tr>
<tr><td rowspan="2">HDMI 1.4a</td><td>8-bit</td><td rowspan="4">RGB 4:4:4
YCbCr 4:4:4
YCbCr 4:2:2
YCbCr 4:2:0</td><td>Maximum input resolution supported by standard program: 1920×1200@60Hz.</td></tr>
<tr><td>10-bit/12-bit</td><td>• Maximum input resolution supported by standard program: 1920×960@60Hz.
• Maximum input resolution supported by customized sending card and receiving card programs: 1920×1080@60Hz.
Note: Customized program supports only A8s receiving card.</td></tr>
<tr><td rowspan="2">Single-link DVI</td><td>8-bit</td><td>Maximum input resolution supported by standard program:1920×1200@60Hz.</td></tr>
<tr><td>10-bit/12-bit</td><td>• Maximum input resolution supported by standard program: 1920×960@60Hz.
• Maximum input resolution supported by customized sending card and receiving card programs: 1920×1080@60Hz.
Note: Customized program supports only A8s receiving card.</td></tr>
<tr><td>3G-SDI</td><td colspan="3">Supported input resolutions: 1920×1080@60Hz, 1280×720@60Hz.
Note: Do not support setting the resolutions for 3G-SDI input sources.</td></tr>
</table>

Front Panel

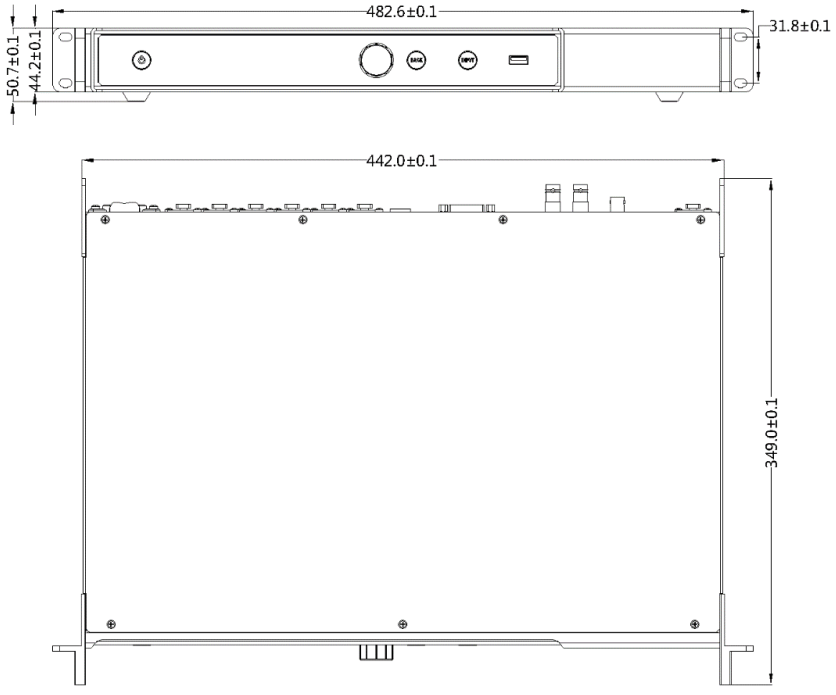


No.	Description
1	Operating indicator
2	Standby button
3	OLED operation screen
4	Function knob
5	**BACK** button: Press to go back to parent menu.
6	**INPUT** button: Press to choose a video source.
7	USB port: Used to update firmware

Rear Panel

Connector Type	Connector Quantity	Connector Name
Input	1	DVI IN
	1	HDMI IN
	1	3G-SDI IN
Output	6	RJ45 (Gigabit Ethernet ports)
	2	OPT1/OPT2 (10G optical ports)
	1	DVI LOOP
	1	HDMI LOOP
	1	3G-SDI LOOP
MONITOR	1	HDMI (Output)
Control	1	GENLOCK IN
	1	GENLOCK LOOP
	1	ETHERNET (Fast Ethernet port)
	1	USB IN
	1	USB OUT
Power	1	100 V–240 V AC

Dimensions



Unit: mm

Specifications

Connector	Connector Name	Description
Type Input	DVI IN	• Single-link DVI connector • Custom resolutions supported: Maximum horizontal resolution: 3840×600@60Hz Maximum vertical resolution: 600×3840@60Hz • Supported standard resolutions: 1024×768@(24/30/48/50/60/72/75/85/100/120)Hz 1280×1024@(24/30/48/50/60/72/75/85)Hz 1366×768@(24/30/48/50/60/72/75/85/100)Hz 1440×900@(24/30/48/50/60/72/75/85)Hz 1600×1200@(24/30/48/50/60)Hz 1920×1080@(24/30/48/50/60)Hz 1920×1200@(24/30/48/50/60)Hz 2560×960@(24/30/48/50)Hz 2560×1600@(24/30)Hz
	HDMI IN	• HDMI 1.4a compliant • HDCP 1.4 compliant • Custom resolutions supported: Maximum horizontal resolution: 3840×600@60Hz Maximum vertical resolution: 600×3840@60Hz • Supported standard resolutions: 1024×768@(24/30/48/50/60/72/75/85/100/120)Hz 1280×1024@(24/30/48/50/60/72/75/85)Hz 1366×768@(24/30/48/50/60/72/75/85/100)Hz 1440×900@(24/30/48/50/60/72/75/85)Hz 1600×1200@(24/30/48/50/60)Hz 1920×1080@(24/30/48/50/60)Hz 1920×1200@(24/30/48/50/60)Hz

Specifications

		2560×960@(24/30/48/50)Hz 2560×1600@(24/30)Hz
	3G-SDI IN	• SMPTE ST 425-1 Level A & B, SMPTE ST 274, ST 296, ST 295 compliant • Maximum supported input resolution: 1920×1080@60Hz Note: 3G-SDI input sources do not support input resolution settings.
Output	RJ45 × 6	• 6 Gigabit Ethernet ports • Maximum loading capacity of a single output: 650 000 pixels • Support redundancy between Ethernet ports.
	OPT1 OPT2	• 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 6 Ethernet ports. • 2 OPT inputs/outputs – The OPT1 works as the primary input or output port, and the 6 Gigabit Ethernet ports work as the corresponding output or input ports. – The OPT2 works as the backup input or output port of OPT1. • In the sending card mode, both OPT ports and 6 Gigabit Ethernet ports can work as output ports to output the same image. • In the fiber converter mode, when the OPT ports work as the input ports, the 6 Gigabit Ethernet ports work as output ports. Or, when the 6 Gigabit Ethernet ports work as input ports, the OPT ports work as output ports.
	DVI LOOP	DVI loop output
	HDMI LOOP	HDMI loop output
	3G-SDI LOOP	SDI loop output
MONITOR	HDMI	Connect to a monitor to monitor the inputs. The monitor output resolution is 1920×1080@60Hz. If the input resolution exceeds the monitor resolution, the input will be automatically scaled in proportion and then displayed on the monitor starting from its top left.
Control	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 MCTRL660 PRO units and the external Genlock input signal.

Specifications

	GENLOCK LOOP	Genlock loop output connector. Up to 8 MCTRL660 PRO units can be cascaded.
	ETHERNET	Fast Ethernet port, which connects to PC and supports TCP/IP
	USB IN	Input port for cascading devices, or connecting to PC
	USB OUT	Output port for cascading devices. Up to 8 MCTRL660 PRO units can be cascaded.
Power	100 V –240 V AC	

Input voltage	100 V–240 V AC
Rated power consumption	20.0 W
Operating temperature	-20°C–60°C
Operating humidity	0% RH–90% RH, non-condensing
Dimensions	482.6 mm × 349.0 mm × 50.7 mm
Net weight	4.6 kg
Space requirement	1U
Packing	Carrying case: 550 mm × 440 mm × 175 mm, white cardboard box Packing box: 530 mm × 140 mm × 410 mm, craft paper box Accessory box: white cardboard box 1 × MCTRL660 PRO unit 1 × Ethernet cable (1.5 m) 1 × DVI cable (1.5 m, double magnetic ring design, EMC) 1 × USB cable (1.5 m) 1 × HDMI cable (1.5 m) 1 × Power cord

FCC Caution

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.