# SU20

## LED Display Controller



Specifications

# Change History

| Document Version | Release Date | Description |
|---|---|---|
| V1.0.0 | TBD | First release |

# Introduction

The SU20 is a cost-effective LED display controller in the new-generation control system COEX series. This controller offers 1x HDMI input, 6x Ethernet outputs and 1x optical output. It can also work with the brand-new software VMP (Vision Management Platform) to provide a better operation and control experience.

# Certifications

The application is in progress. Please contact NovaStar if needed.

**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 and Outputs

✦ **HDMI input**

1x HDMI 1.3 (with loop through)

✦ **10-bit and 8-bit video inputs**

✦ **Ethernet outputs**

6 Ethernet outputs, up to 2.3 million pixels supported

✦ **Optical output**

One10G SFP+ output

✦ **Adaptive frame rate**

Adaptive to various input frame rates, including decimal frame rates

## Advanced Features

✦ **Full Grayscale Calibration**

Each grayscale of the input source has its own unique calibration coefficients, which can achieve brightness and chroma uniformity in high brightness, medium grayscale, and low grayscale at the same time.

✦ **Pixel level brightness and chroma calibration**

Work with NovaStar's high-precision calibration system to calibrate the brightness and chroma of each pixel, effectively eliminating brightness differences and chroma differences, and enabling high brightness consistency and chroma consistency.

✦ **Latency**

- Support low latency. The latency at the sending card is 0 frame (less than 1 ms) and the loading capacity is not reduced.
- Support additional video delay. Zero to two frames of delay can be added at the sending card.

## Device Controls

✦ **VMP software control**

The device can be connected to the VMP software to have a brand-new interaction interface and smart device management.

❖ **Cascading control via Ethernet**

The Gigabit Ethernet control ports support TCP/IP protocol and star topology. No switch is needed to cascade control of multiple devices as a network switch is already built in.

## Video Sources

| Input | Bit Depth | Sampling Format | Max Input Resolution |
|---|---|---|---|
| HDMI 1.3 | 8bit/10bit | RGB 4:4:4 | 1920×1200@60Hz |
| | | YCbCr 4:4:4 | |
| | | YCbCr 4:2:2 | |

# Appearance

## Front Panel



Running Indicator

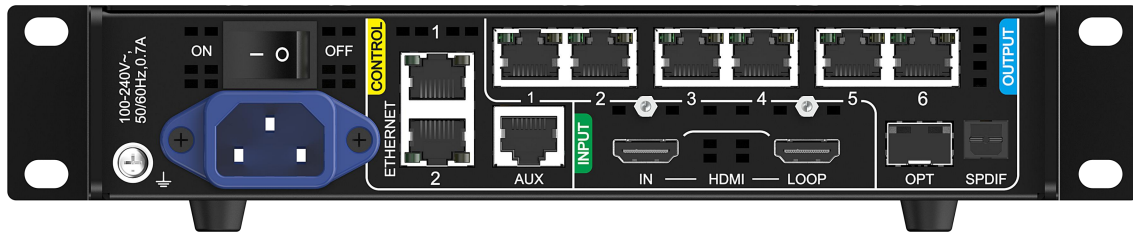Standby Button    USB 2.0    LCD Screen    Knob    BACK

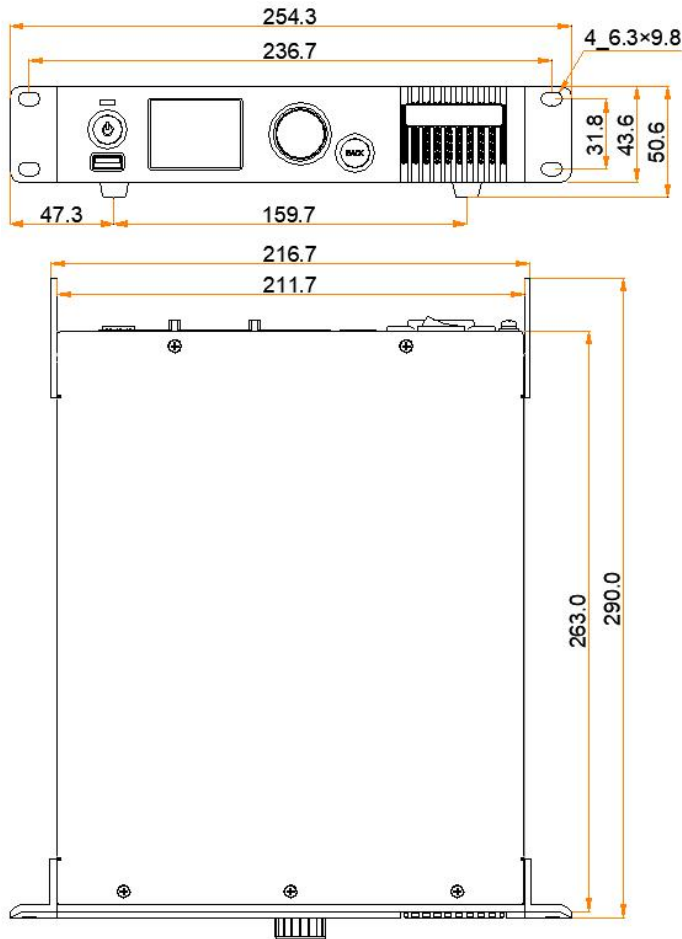| Name | Description |
|---|---|
| Running Indicator | • Solid red: Standby<br>• Solid blue: The device is being powered on.<br>• Solid green: The device is running normally.<br>• Flashing red: The device is running abnormally. |
| Standby Button | • Press the button to power on or power off the device.<br>• Hold down the button for 5s or longer to restart the device. |
| USB 2.0 | Used to send cabinet configuration files and export the diagnostic result |
| LCD Screen | A 2.0-inch screen that displays the device status, menus, submenus and messages for parameter settings |
| Knob | • On the home screen, press the knob to enter the main menu screen.<br>• On the main menu screen, rotate the knob to select a menu item or adjust the parameter value. Press the knob to confirm the operation.<br>• Hold down the knob and **BACK** button simultaneously for 5s or longer to lock or unlock the buttons. |
| BACK | Go back to the previous menu or cancel the current operation. |

## Rear Panel



| Inputs (INPUT area) | | | |
|---|---|---|---|
| Type | Qty | Description | |
| HDMI IN | 1 | Resolutions | Max resolution: 1920×1200@60Hz<br>Min resolution: 800×600@60Hz |
| | | Max width/height | Max width: 3840 pixels (3840×600@60Hz)<br>Max height: 2560 pixels (800×2560@60Hz) |
| | | Frame rates | 23.98/24/25/29.97/30/47.95/48/50/59.94/60/71.93/72/75/100/119.88/ 120 Hz |
| | | EDID management | Support standard resolutions, up to 1920×1200@60Hz.<br>Support custom input resolutions. |
| | | HDCP | HDCP 1.4 compliant |
| | | Interlaced signal inputs | Not supported |

| Outputs (OUTPUT area) | | |
|---|---|---|
| Type | Qty | Description |
| 1–6 | 6 | Gigabit Ethernet ports. Support redundancy between Ethernet ports.<br>Max loading capacity per port:<br>• 8bit@60Hz: 650,000 pixels<br>• 10bit@60Hz: 480,000 pixels (available only with the A10s Pro receiving card)<br>• 10bit@60Hz: 325,000 pixels |
| OPT | 1 | 10G SFP+ port |
| SPDIF | 1 | A digital audio output (Reserved) |
| HDMI LOOP | 1 | HDMI loop through |

| Controls (CONTROL area) | | |
|---|---|---|
| Type | Qty | Description |
| ETHERNET | 2 | Gigabit Ethernet control ports. Support TCP/IP protocol and star topology.<br>They have the same functions without priority and order, and can be connected to VMP software. No switch is needed to cascade control of multiple devices as a network switch is already built in. |
| AUX | 1 | An auxiliary connector that connects to the central control device (RS232) (Reserved) |

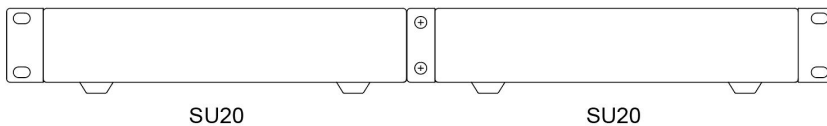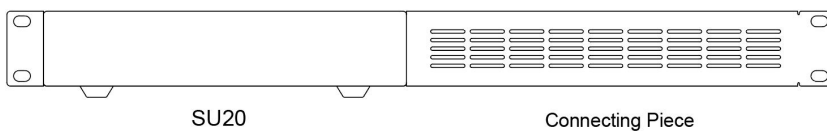| Power | | |
|---|---|---|
| 100-240V~, 50/60Hz, 0.7A | 1 | An AC power input connector and switch |

# Dimensions



Tolerance: ±0.3     Unit: mm
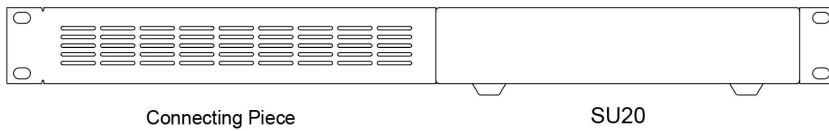
# Assembling Effect Diagram

A single SU20 device is half-1U in width. Two SU20 devices, or one SU20 device and a connecting piece can be combined into one assembly that is 1U in width. The assembly can be mounted in a standard 19-inch rack.

## Assembly of Two SU20



SU20                     SU20

## Assembly of an SU20 and a Connecting Piece



SU20                     Connecting Piece

Connecting Piece         SU20

# Specifications

| | | |
|---|---|---|
| Electrical Specifications | Power input | 100-240V~, 50/60Hz, 0.7A |
| | Max power consumption | 25 W |
| Operating Environment | Temperature | −20ºC to +60ºC |
| | Humidity | 0% RH to 80% RH, non-condensing |
| Storage Environment | Temperature | −30ºC to +80ºC |
| | Humidity | 0% RH to 95% RH, non-condensing |
| Physical Specifications | Dimensions | 254.3 mm × 50.6 mm × 290.0 mm |
| | Net weight | 2.1 kg |
| | Gross weight | 3.1 kg<br>Note: It is the total weight of the product, accessories, printed materials and packing materials packed according to the packing specifications. |
| Packing Information | Outer box | 387.0 mm × 173.0 mm × 359.0 mm, kraft paper box |
| | Packing box | 362.0 mm × 141.0 mm × 331.0 mm, kraft paper box |
| | Accessories | • 1x Power cord<br>• 1x Ethernet cable<br>• 1x HDMI cable<br>• 1x Certificate of Approval |
| IP Rating | IP20<br>Please prevent the product from water intrusion and do not wet or wash the product. | |

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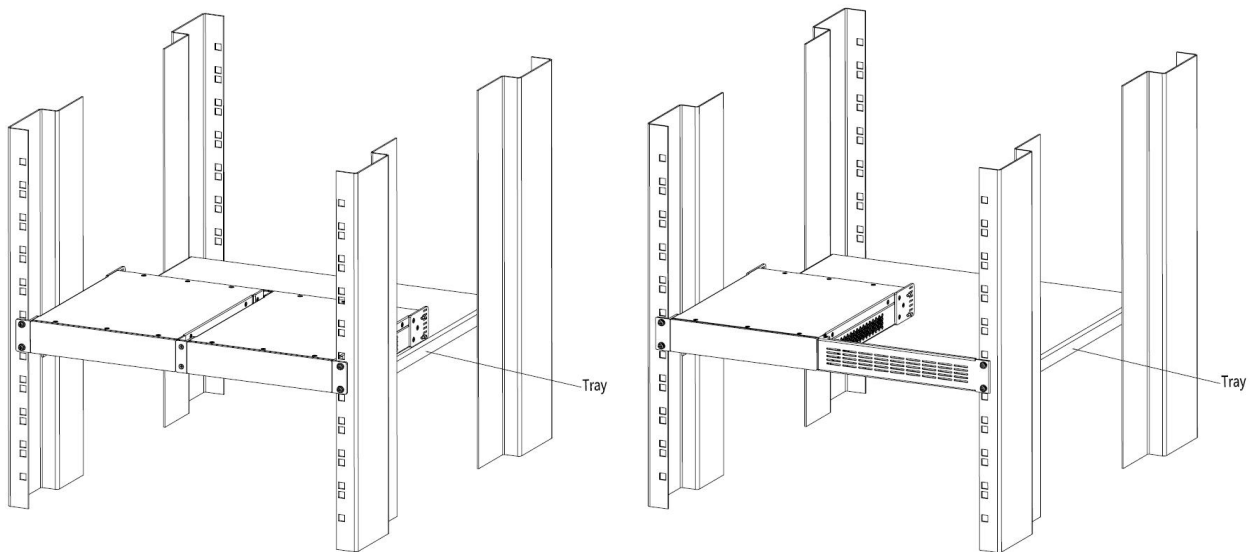
# Notes and Cautions

## 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.

## Notes for Installation

When the product needs to be installed on the rack, 4 screws at least M5*12 should be used to fix it. The rack for installation shall bear at least 9kg weight.



- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

- Reduced Air Flow – Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

- Mechanical Loading – Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

- Circuit Overloading – Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- Reliable Earthing – Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

## Others

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

**Trademark**

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**Statement**

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