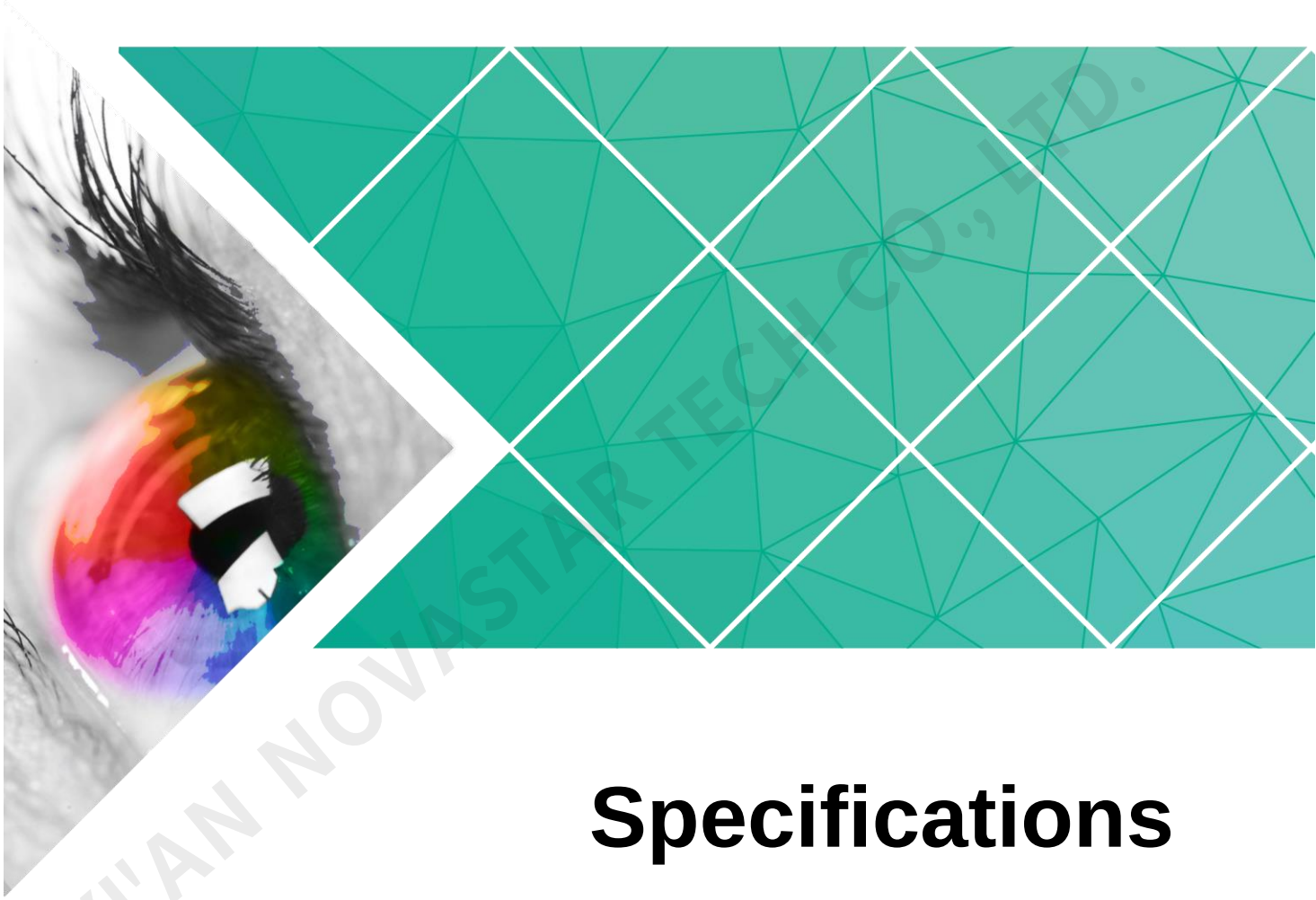
4K-Prime

All-in-One Controller



Specifications

Document Version: 1.0.0

Document Number: NS160110193

Trademark

NOVASTAR is a trademark of Xi’an NovaStar Tech Co., Ltd.

Statement

You are welcome to use the product of Xi’an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via contact information given in document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

Change History

Version	Hardware Version	Release Date	Description
V1.0.0	V1.0.0.0	XXXX-XX-XX	First release

1 Introduction

The 4K-Prime is a NovaStar's new all-in-one controller that features excellent video processing, control capabilities and LED screen configurations. The 4K-Prime can receive a variety of video signals, supporting ultra HD 4K×2K@60Hz image processing and sending capabilities.

With the help of smart control software V-Can from NovaStar, the 4K-Prime can enable richer image mosaic effects as well as faster and easier operations.

The 4K-Prime can send the processed video to the LED screen via Neutrik Ethernet ports and optical fiber ports. Thanks to its powerful video processing capabilities and sending functions, the 4K-Prime is well suited for stage control systems, conference sites, activities, exhibition sites and other high-end rental applications as well as fine-pitch LED displays.

2 Features

- A variety of inputs: 1 × DP 1.2, 1 × HDMI 2.0 and 4 × DVI
- More output connectors, larger loading capacity

  Provides 16 × Neutrik Ethernet outputs and 4 × optical fiber outputs, with loading capacity up to 10,400,000 pixels.
- DVI mosaic

  An input source can be made up of at most 4 DVI input sources.
- HDR output

  Greatly enhances display image quality, providing more clear and vivid image.
- Decimal frame rates

  The supported frame rates are 23.98, 29.97 and 59.94.
- Customized BKG settings: Pure color BKG and BKG image
- Capture function

  Captures input source image which can be used as a BKG image.
- Personalized image scaling: Full screen, pixel to pixel and custom
- Image mosaic

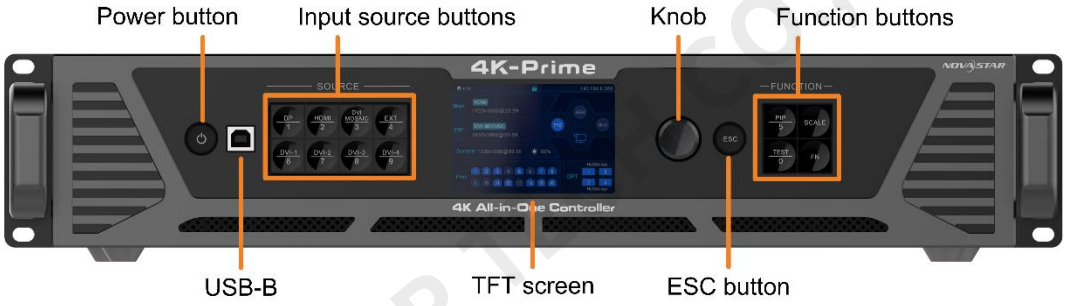
  Up to 4 4K-Prime units can load a super-large screen.
- V-Can (smart control software from NovaStar) supported
- 10 presets

  At most 10 user presets can be created and saved as templates which can be used directly and conveniently.
- EDID management supported

  Supports custom EDID and standard EDID.

3 Appearance

Front Panel



Type	Description
Power button	• Power on: Press the button to power on the device. • Power off: Hold down the button to pop up a dialog box, then rotate the knob to select **Yes** and press the knob to power off the device.
USB-B	For PC connection for debugging
Input source buttons	• Input source switching buttons Press the button to switch the input source for the main layer, and hold down the button to switch the input source for the PIP. • Button indicators are used to indicate the working status of the input source signal. – White, always on: Input source is not used, and no input signal is accessed. – Blue, fast flashing: Input source is used, but no input signal is accessed. – Blue, slow flashing: Input source is not used, but input signal is accessed. – Blue, always on: Input source is used, and input signal is accessed.
TFT screen	Display the current device status and settings menu.

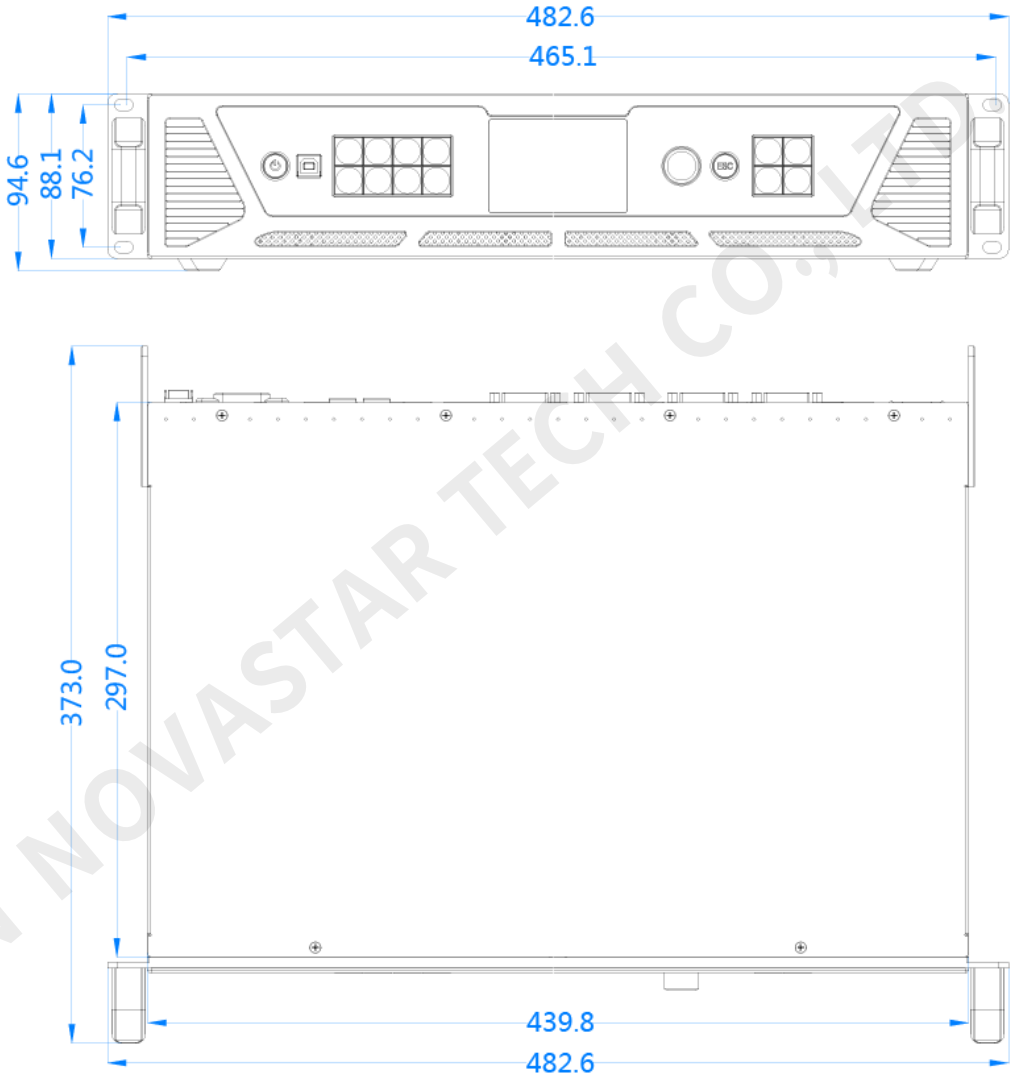
Knob	• On the home screen, press the knob to enter the operation menu screen. • On the operation menu screen, rotate the knob to select a menu item, and press the knob to confirm the selection or enter the submenu. • When a menu item with parameters is selected, you can rotate the knob to adjust the parameters. Please note that after adjustment, you need to press the knob again to confirm the adjustment.
ESC button	Press the button to exit the current menu or cancel the operation.
Function buttons	• **PIP**: Enable/Disable PIP. • **SCALE**: Enable/Disable full screen function for main layer. • **TEST**: Enter the test pattern setting menu. • **FN**: This is a custom function button. The function can be customized to Synchronization, Freeze, Black Out, Quick Configuration, Image Quality, Preset Settings, Main Layer or Swap Layer Priorities. It is Synchronization by default.

Rear Panel

Input		
Connector	**Quantity**	**Description**
DVI	4	• Four DVIs are all single-link DVI connectors by default. – 4 × DVI inputs – Each DVI: Input resolutions up to 1920×1200@60Hz, downward compatible – 4 DVI input sources constitute 1 input source (DVI MOSAIC). • In dual-link mode – DVI 1 and DVI 3 are dual-link DVI connectors while DVI 2 and DVI 4 are unavailable. – DVI 1/DVI 3: Input resolutions up to 3840×1080@60Hz, downward compatible • Standard resolutions supported

DP 1.2	1	• Input resolutions up to 3840×2160 @60Hz, downward compatible • HDCP 1.3 compliant • Standard resolutions supported
HDMI 2.0	1	• Input resolutions up to 3840×2160 @60Hz, downward compatible • HDCP 1.4 an EDID 1.4 • Standard resolutions supported
Output		
Connector	**Quantity**	**Description**
Ethernet port	16	• 16 × Gigabit Ethernet output connectors, allowing for a loading capacity up to 10,400,000 pixels • Maximum loading capacity: Max. width: 16K, max. height: 8K • Maximum loading capacity of a single Ethernet port: – 8-bit input source: 650,000 pixels – 10-bit/12-bit input source: 320,000 pixels
OPT 1–4	4	4 optical fiber connectors support copy and hot backup modes when used for output simultaneously. • OPT 1 transmits data of Ethernet ports 1–8. • OPT 2 transmits data of Ethernet ports 9–16. • OPT 3 serves as the copy/hot backup for OPT 1. • OPT 4 serves as the copy/hot backup for OPT 2.
MONITOR	1	• HDMI connector for output monitoring • Resolutions up to 1920×1080@60Hz
Control		
Connector	**Quantity**	**Description**
ETHERNET	1	Connect to PC for communication, or connect to Web for device control.
USB (Type-B)	1	• Connect to PC for debugging. • Used as the input connector to connect another 4K-Prime unit
USB (Type-A)	1	Used as the output connector to connect another 4K-Prime unit
RS232	1	Connect to the central control device.

4 Dimensions



Unit: mm

5 Applications

6 Specifications

Overall Specifications	
Type	**Description**
Power connector	AC100-240V 50/60Hz
Operating temperature	0°C to 50°C
Overall power consumption	70 W
Dimensions	482.6 mm × 373.0 mm × 94.6 mm
Package dimensions (flight case)	550.0 mm × 561.0 mm × 155.0 mm
Net weight	6.2 kg
Total weight	18 kg

7 Video Source Features

Input Connector	Color Depth		Max. Input Resolution
• HDMI 2.0 • DP 1.2	8 bit	RGB4:4:4	3840×2160@60Hz
		YCbCr4:4:4	3840×2160@60Hz
		YCbCr4:2:2	3840×2160@60Hz
		YCbCr4:2:0	Unsupported
	10 bit	RGB4:4:4	1920×1080@60Hz
		YCbCr4:4:4	1920×1080@60Hz
		YCbCr4:2:2	3840×2160@60Hz
		YCbCr4:2:0	Unsupported
	12 bit	RGB4:4:4	1920×1080@60Hz
		YCbCr4:4:4	1920×1080@60Hz
		YCbCr4:2:2	3840×2160@60Hz
		YCbCr4:2:0	Unsupported
S-DVI	8 bit	RGB4:4:4	1920×1080@60Hz
D-DVI	8 bit	RGB4:4:4	3840×1080@60Hz