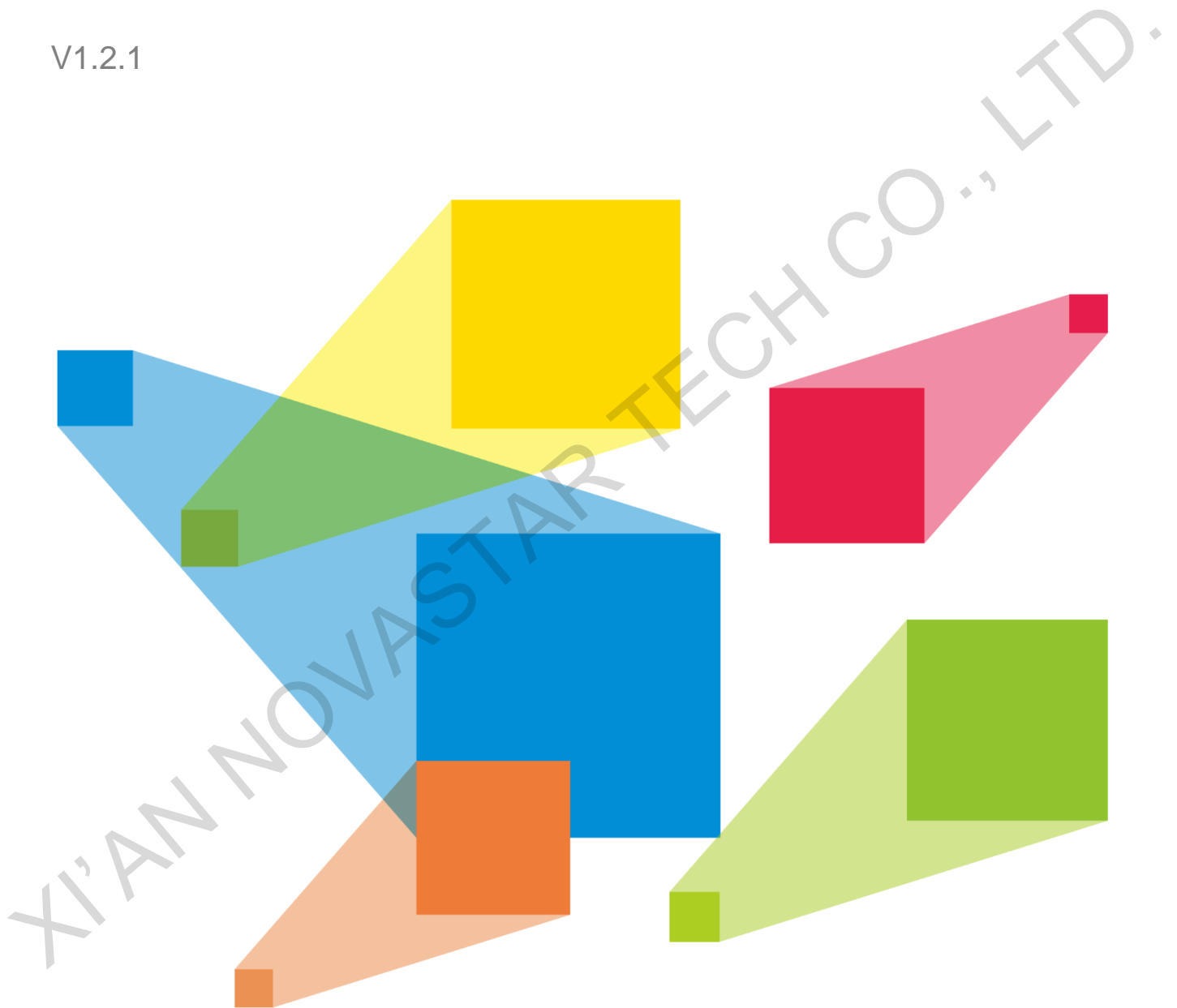


# HDR Master 4K

## Video Processor

V1.2.1



**Specifications**

## Introduction

The HDR Master 4K is a video processor converting SDR content into an HDR format. By analyzing the SDR content and then intelligently filling in the missing information, the HDR Master 4K raises the dynamic range of brightness, color gamut and color depth to HDR standard. With this all-round upgrade, the SDR video source is converted into an HDR10 format which has a wider dynamic range of brightness, more colors and richer bright and dark details.

The HDR Master 4K provides full 4Kx2K@60Hz input and output connectors. Based on a pure hardware system architecture, the HDR Master 4K allows for stable and highly-efficient processing capabilities, output connector converting, SDI mosaic as well as long-distance optical fiber transmission.

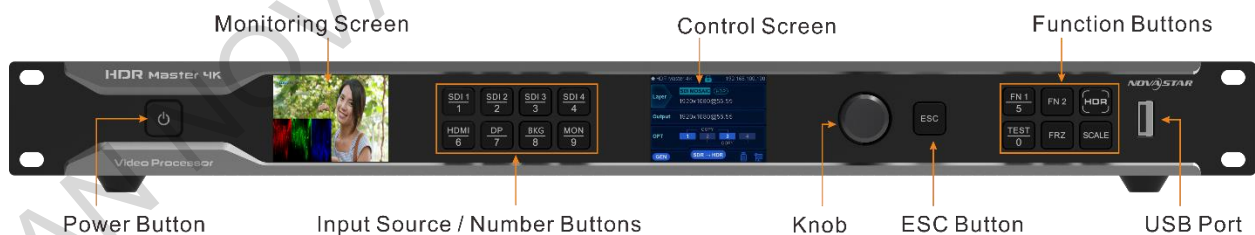
Thanks to the powerful capabilities of receiving a variety of video signals, ultra HD image processing and HDR10 image output, the HDR Master 4K can be widely used in applications such as high-end rental, stage control, fine-pitch LED screens and video source conversion.

## Features

- 1 pluggable input card
  - 1 x DP 1.2, 1 x HDMI 2.0 and 4 x 12G-SDI
  - 3G-SDI input mosaic
  - Up to six 4Kx2K@60Hz video inputs simultaneously
- 2 pluggable output cards that output the same content synchronously
  - One with 1 x HDMI 2.0 and 4 x 10G optical fiber ports
  - The other one with 1 x HDMI 2.0 and 4 x 12G-SDI output connectors
  - 3G-SDI output mosaic
- SDR to HDR10 conversion
- BKG and LOGO file importing via a USB drive
  - Up to 10 BKG images, each width or height up to 8192 pixels
  - Up to 10 LOGO images, each width or height up to 512 pixels
- An LCD screen dedicated for monitoring
- Self-test and status monitoring
- Input backup
- Output auto scaling to fit screen
- Output color space, sampling rate and bit depth settings
- Layer image flipping, input crop and layer mask

## Appearance

### Front Panel






Area	Description
Power button	Power on or power off the device.
Monitoring screen	An LCD screen Display the input and output monitoring and input source RGB parade.
Input source and number buttons	Switch the input source, display the input source status or enter numbers. <ul style="list-style-type: none"> <li>• On (green): An input source is accessed and used by the layer.</li> <li>• Flashing (red): No input source is accessed, but used by the layer.</li> <li>• On (yellow): An input source is accessed, but not used by the layer.</li> <li>• Off: No input source is accessed or the input source is abnormal.</li> </ul>

Area	Description
Control screen	An LCD screen Display the device statuses, menus, submenus and messages.
Knob	Select a menu item, adjust a parameter value or confirm the selection.
ESC button	Exit the menu or cancel the operation.
Function buttons	<ul style="list-style-type: none"> <li>• FN 1: A reserved button for custom function, or used as a number button to enter 5</li> <li>• FN 2: A reserved button for custom function</li> <li>• HDR: Turn on or turn off the SDR to HDR converting function. <ul style="list-style-type: none"> <li>- On: HDR function turned on</li> <li>- Off: HDR function turned off</li> </ul> </li> <li>• TEST: Quickly access the test pattern menu, or used as a number button enter 0 <ul style="list-style-type: none"> <li>- On: Test pattern open</li> <li>- Off: Test pattern closed</li> </ul> </li> <li>• FRZ: Freeze the output image. <ul style="list-style-type: none"> <li>- On: Freeze function turned on</li> <li>- Off: Freeze function turned off</li> </ul> </li> <li>• SCALE: Make the layer size equal to the output resolution. <ul style="list-style-type: none"> <li>- On: Scale function turned on (default)</li> <li>- Off: Scale function turned off</li> </ul> </li> </ul>
USB port	1 × USB 2.0 (Type-A) <ul style="list-style-type: none"> <li>• Insert a USB drive to update the device.</li> <li>• Insert a USB drive to import the BKG or LOGO files</li> </ul>

### Rear Panel



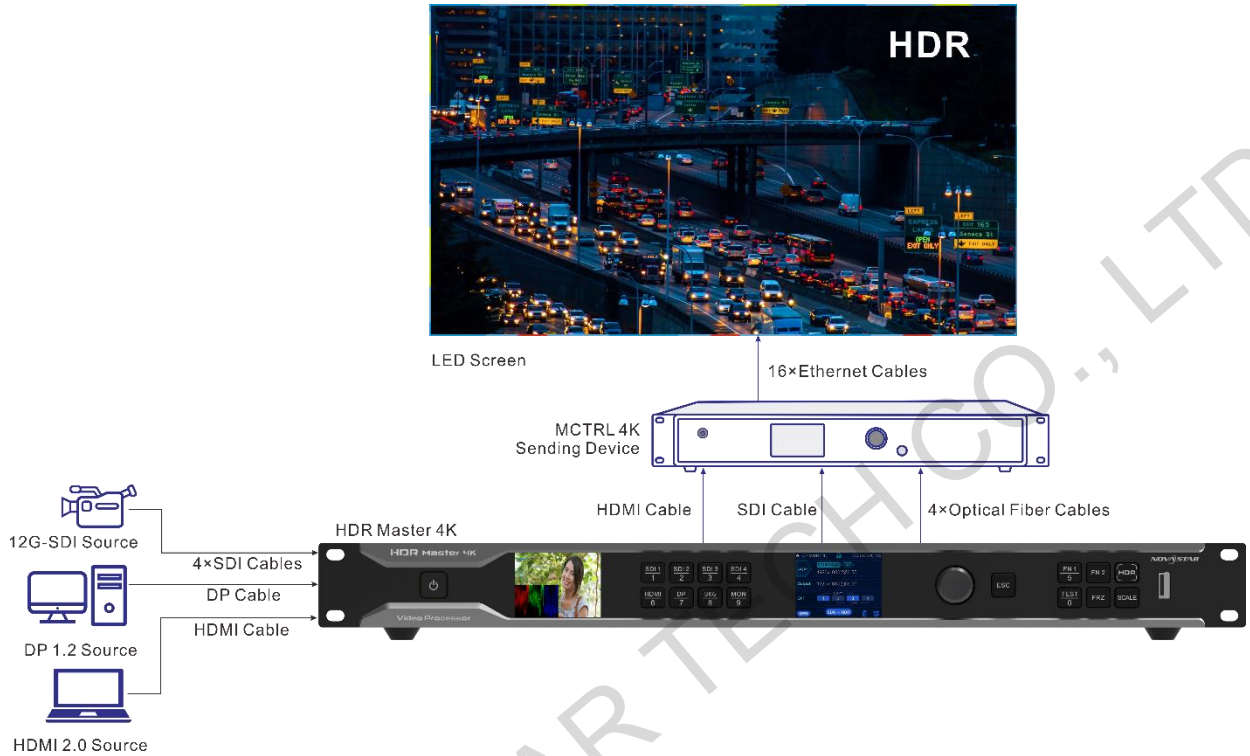
Input Card			
Connector	Qty	Standard	Description
HDMI 2.0	1	HDMI 2.0 Backwards compatible with HDMI 1.4 and HDMI 1.3	<ul style="list-style-type: none"> <li>• Up to 4Kx2K@60Hz or 8Kx1K@60Hz input resolution</li> <li>• 1080i/576i/480i deinterlacing</li> <li>• HDCP 2.2 and HDCP 1.4 compliant</li> <li>• HDR10 and HLG supported</li> <li>• Max. width: 8192 pixels, max. height: 4000 pixels</li> </ul>
DP 1.2	1	DP 1.2 Backwards compatible with DP 1.1	<ul style="list-style-type: none"> <li>• Up to 4Kx2K@60Hz or 8Kx1K@60Hz input resolution</li> <li>• 1080i/576i/480i deinterlacing</li> <li>• HDCP 1.3 compliant</li> <li>• Max. width: 8192 pixels, max. height: 4000 pixels</li> </ul>
12G-SDI	4	12G-SDI Backwards compatible with 6G-SDI, 3G-SDI,	<ul style="list-style-type: none"> <li>• Supports ST-2082-1 (12G), ST-2081-1 (6G), ST-424 (3G), ST-292 (HD) and SMPTE 259 (SD).</li> <li>• Up to 4Kx2K@60Hz input resolution</li> </ul>

		HD-SDI and SD-SDI	<ul style="list-style-type: none"> <li>• 1080i/576i/480i deinterlacing</li> <li>• For 3G-SDI, HD-SDI or SD-SDI inputs, SDI mosaic input is supported.</li> </ul>
<b>Output Card</b>			
<b>1×HDMI2.0+4×Fiber Output Card</b>			
			
Connector	Qty	Standard	Description
HDMI 2.0	1	HDMI 2.0 Backwards compatible with HDMI 1.4 and HDMI 1.3	<ul style="list-style-type: none"> <li>• HDR10 supported</li> <li>• Up to 4Kx2K@60Hz output resolution</li> <li>• Max. width: 8192 pixels, max. height: 4000 pixels</li> </ul>
10G optical fiber port	4	10G	<ul style="list-style-type: none"> <li>• OPT 1 and OPT 2 copy the output on HDMI 2.0.</li> <li>• OPT 3 copies the output on OPT 1.</li> <li>• OPT 4 copies the output on OPT 2.</li> </ul>
<b>4×12G SDI+1×HDMI2.0 Process Card</b>			
			
Connector	Qty	Standard	Description
HDMI 2.0	1	HDMI 2.0 HDMI 1.4 and HDMI 1.3 compatible	<ul style="list-style-type: none"> <li>• HDR10 supported</li> <li>• Up to 4Kx2K@60Hz output resolution</li> <li>• Max. width: 8192 pixels, max. height: 4000 pixels</li> </ul>
12G-SDI	4	12G-SDI 6G-SDI, 3G-SDI, HD-SDI and SD-SDI compatible	<ul style="list-style-type: none"> <li>• Up to 4Kx2K@60Hz output resolution on each connector</li> <li>• For 3G-SDI, HD-SDI or SD-SDI outputs, SDI mosaic output is supported.</li> </ul> <p><b>Note:</b> When two connectors are used for mosaic output, SDI 1 and SDI 2 are always used. SDI 3 and SDI 4 copy the output on SDI 1 and SDI 2 respectively.</p>
<b>Control Card</b>			
			
ETHERNET		Gigabit Ethernet port Connect to the control PC.	
USB		2 × USB 2.0 (Type-A)	<ul style="list-style-type: none"> <li>• Insert a USB drive to update the device.</li> <li>• Insert a USB drive to import the BKG or LOGO files</li> </ul>
CONTROL UI		Reserved	
GENLOCK		Connect to a sync source.	<ul style="list-style-type: none"> <li>• IN: Accept the sync source.</li> <li>• LOOP: Loop the sync source.</li> </ul>

**Note:**

The 1xHDMI2.0+4xfiber output card and 4x12G SDI+1xHDMI2.0 process card output the same content synchronously.

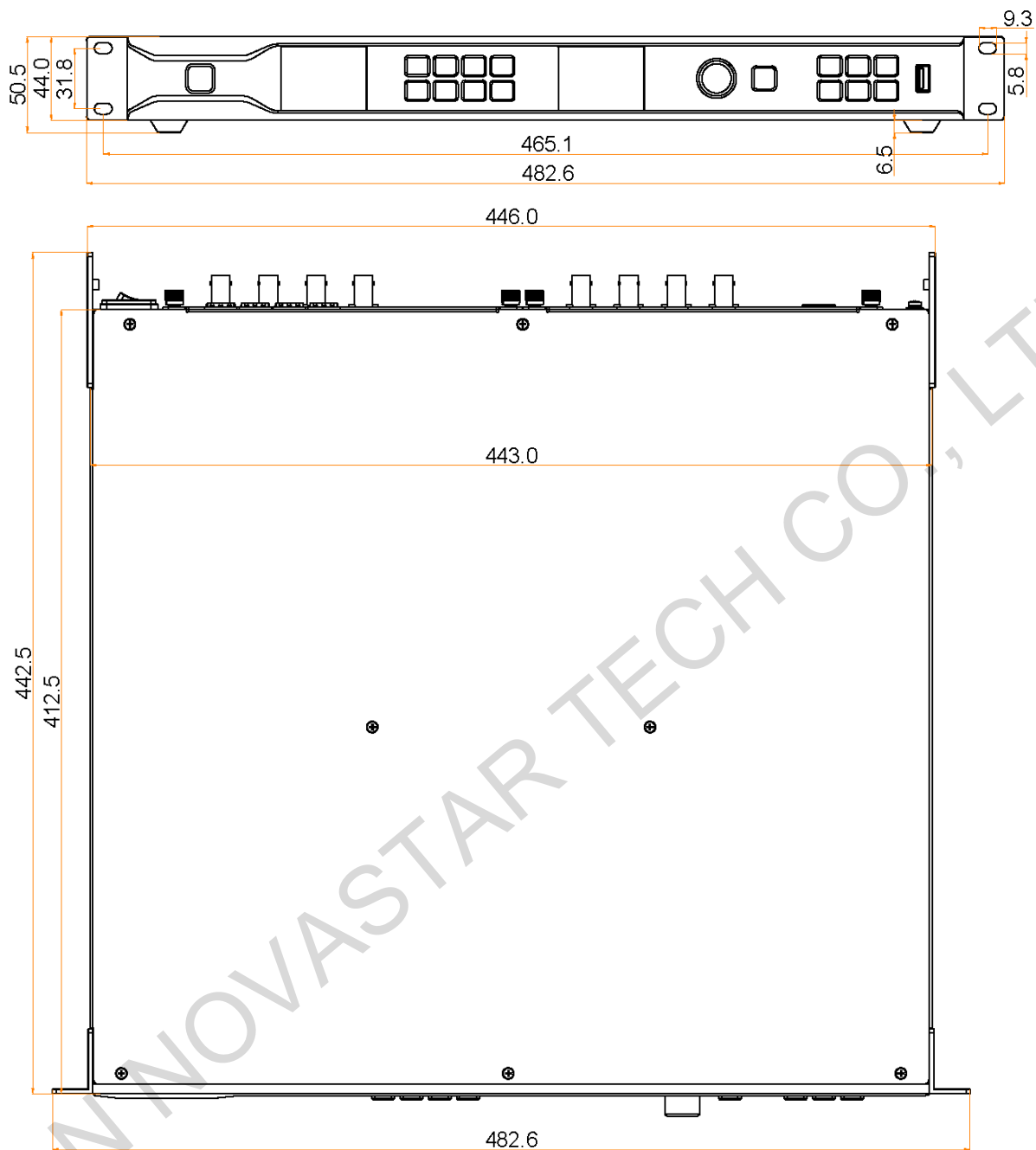
## Applications



**Note:**

When SDR to HDR converting function is enabled, only NovaStar's NovaPro UHD, NovaPro UHD Jr and MCTRL 4K devices can be connected currently.

## Dimensions



Tolerance:  $\pm 0.3$

Unit: mm

## Specifications

Overall Specifications		
Operating Environment	Temperature	0°C to 45°C
	Humidity	10% RH to 85% RH non-condensing
Storage Environment	Temperature	-20°C to +60°C
	Humidity	10% RH to 90% RH non-condensing
Electrical Parameters	Power supply	AC100-240V~, 50/60Hz
	Max. power	120 W
Physical Specifications	Dimensions	482.6 mm x 442.5 mm x50.5 mm
	Net weight	7.5 kg
	Gross weight	12.1 kg
Packing Information	Carrying case	582 mm x 185 mm x 555 mm
	Big carton	612 mm x 225 mm x 595 mm
	Accessory box	2 x HDMI cables 1 x Mini DP to DP cable 1 x DP cable 1 x Ethernet cable 1 x China power cord 1 x European power cord 1 x UK power cord 1 x US power cord 1 x Cable clip 1 x Cable tie 1 x Quick Start Guide 1 x Safety Manual 1 x Customer Letter 1 x Certificate of Approval
Certifications		CE, FCC, IC, RoHS
Noise Level (typical at 25°C/77°F)		50 dB (A)

## Input and Output Features

Connector	Bit Depth		Max. Input and Output Resolutions
<ul style="list-style-type: none"> <li>• HDMI 2.0</li> <li>• DP 1.2</li> </ul>	8 bit	RGB 4:4:4	4096x2160@60Hz 8192x1080@60Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	Not supported
		YCbCr 4:2:0	
	10 bit	RGB 4:4:4	2560x1600@60Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	3840x2160@60Hz
		YCbCr 4:2:0	Not supported
	12 bit	RGB 4:4:4	2560x1600@60Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	3840x2160@60Hz
		YCbCr 4:2:0	Not supported
12G-SDI	<ul style="list-style-type: none"> <li>• ST-2082-1 (12G), ST-2081-1 (6G), ST-424 (3G), ST-292 (HD) and SMPTE 259 SD inputs and outputs</li> <li>• Up to 4096x2160@60Hz inputs and outputs</li> <li>• DOES NOT allow you to set the input resolution and bit depth.</li> </ul>		



**Copyright © 2020 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.**

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

**Trademark**

**NOVA STAR** 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 info given in document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

XI'AN NOVASTAR TECH CO., LTD.

[Official website](http://www.novastar.tech)  
www.novastar.tech

[Technical support](mailto:support@novastar.tech)  
support@novastar.tech