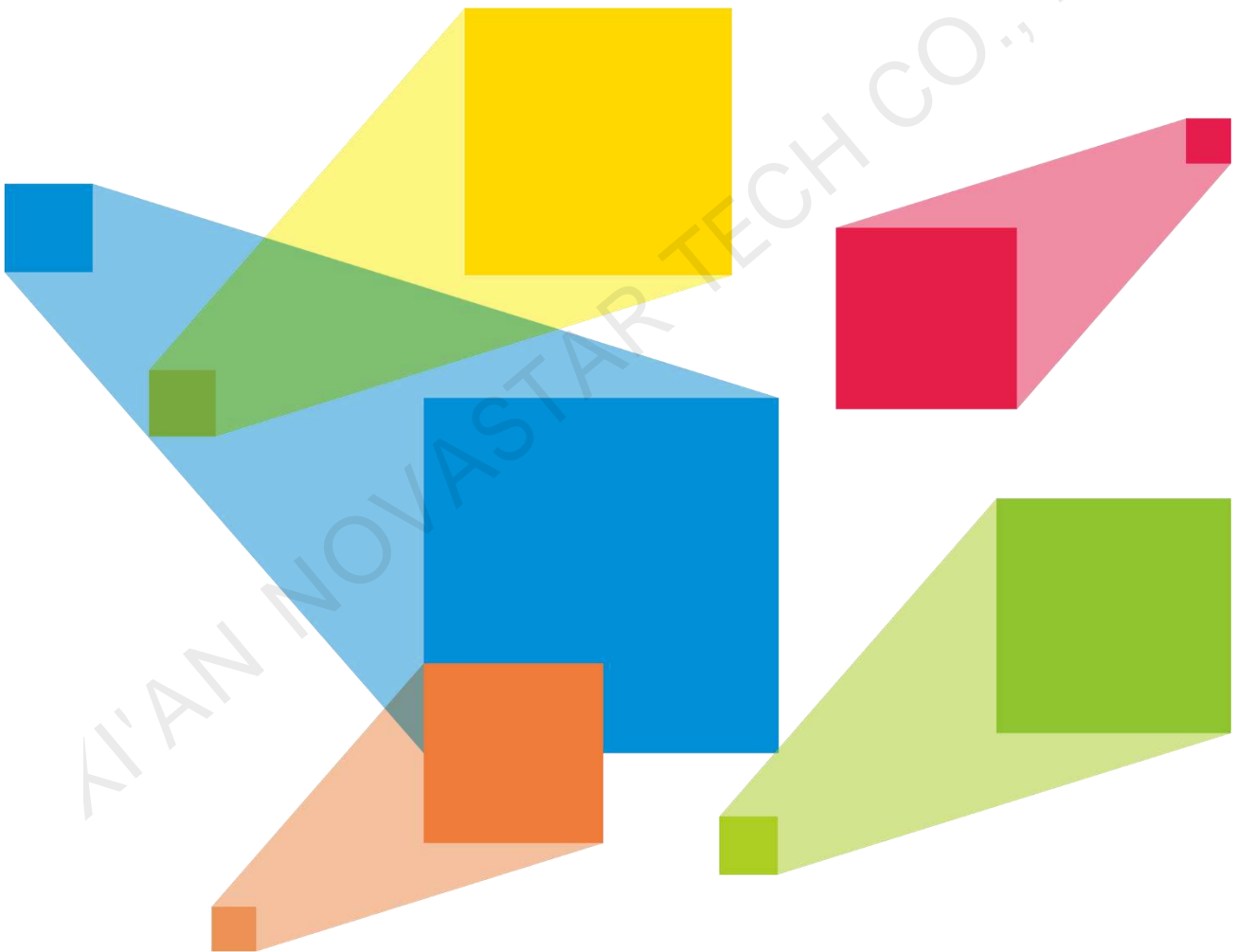


# N9

## Seamless Switcher

V2.3.1



Specifications

## Introduction

The N9 is NovaStar's high-performance seamless switcher that integrates video processing, image mosaic, transition effects and multi-screen display capabilities. With invisible layer editing process, the N9 sends the images to LED screen smoothly by one button press, which is ideal for various applications, such as intermediate and high-end rental, stage control, media centers, big conference sites, exhibition sites, concerts and command centers.

The N9 features powerful video signal receiving and processing abilities, and supports up to 9 input sources at the same time. In addition, the N9 supports up to 4Kx2K@60Hz input resolution and at most 7 layers. Four pairs of DVI output connectors can be used for mosaic output, and the connectors in each pair output the same content. What's more, a single N9 unit can load an up to 8KK screen, and multiple N9 units can be linked to load a super-large screen.

The N9 can work with NovaStar's C1 event controller and V-Can smart control software, allowing for richer screen mosaic effects and easier operation.

## Features

- Industry-standard video input connectors
  - 1x DP 1.2
  - 1x DP 1.1
  - 2x HDMI 1.3
  - 4x DVI
  - 1x 3G-SDI (IN-LOOP)
- Offers 7 more input sources when working with a VE7 video input expander
- 4 pairs of DVI connectors for mosaic output
  - Connectors in each pair output the same content. A maximum of 4 connectors can be used for mosaic output.
  - The mosaic layout can be 4x1, 1x4 or 2x2.
  - The maximum loading capacity can reach 8,800,000 pixels and the maximum mosaic width or height can be up to 8192 pixels.
  - Supports 4 single-link connectors or 2 dual-link connectors for mosaic output.
- 7x Layers
  - Each layer supports cross-connector output.
  - Layer keying, cloning, mirroring and Z-order sorting are supported.
  - Input source cropping is supported.
- Customized BKG settings
  - Supports loading BKG images from the control computer or C1 event controller.
- Pure color BKG and BKG images are both supported.
- Supports capturing of any input source or PGM image, and the captured image can be used as BKG image.
- 32x Presets for easy use in future
- EDID management
  - Supports input resolution management for DVI, HDMI and DP connectors.
- Display control and transition effects
  - Screen FTB or freeze by one button press
  - Supports multiple transition effects and transition duration settings.
- HDMI connector for output monitoring
  - Supports monitoring of all input sources, PVW and PGM.
  - Supports displaying of input resolution and frame rate.
- 2x AUX outputs for connecting auxiliary display devices such as teleprompters
- Multiple operation modes
  - N9 front panel
  - V-Can
  - C1 event controller
- Genlock synchronization or synchronization with any input source, achieving output vertical synchronization

## Appearance

### Front Panel



No.	Button	Function
1	Input source buttons	Indicate input source status or switch the layer input source. Status LEDs: <ul style="list-style-type: none"> <li>• On: The input source is accessed and in use.</li> <li>• Dim: The input source is accessed but not in use.</li> <li>• Off: The input source is not accessed or abnormal.</li> </ul>
2	LCD screen	Display current device status, menus, submenus and messages.
	Knob	<ul style="list-style-type: none"> <li>• On the home screen, press the knob to enter the main menu screen.</li> <li>• On the main menu screen, rotate the knob to select a menu item, and press the knob to confirm the selection or enter the submenu.</li> <li>• 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.</li> </ul>
	BACK button	Exit the current menu or cancel an operation.
	TAKE button	Send PVW to PGM with a transition effect.
	TEST button	Access the test pattern menu.
3	Layer buttons	Open or close a layer, and indicate the layer status. Status LEDs: <ul style="list-style-type: none"> <li>• On: The layer is open.</li> <li>• Flashing: The layer is being edited.</li> <li>• Off: The layer is closed.</li> </ul> BKG: Open or close the BKG.
4	Preset button	Access the preset menu.
	Fn button	A custom function button

#### Note:

Hold down the knob and BACK button simultaneously for 3s or longer to lock or unlock the device front panel.

## Rear Panel



Input	
INPUT-1	1x DP 1.1 <ul style="list-style-type: none"> <li>• Up to 3840x1080@60Hz input resolution</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 3840 pixels (3840x1211@60Hz)</li> <li>Max. height: 4000 pixels (1054x4000@60Hz)</li> </ul> </li> <li>• HDCP 1.4 compliant</li> <li>• Does not support interlaced signal inputs.</li> </ul>
INPUT-2	1x HDMI 1.3 <ul style="list-style-type: none"> <li>• Up to 1920x1200@60Hz input resolution</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 2046 pixels (2046x1207@60Hz)</li> <li>Max. height: 2784 pixels (800x2784@60Hz)</li> </ul> </li> <li>• HDCP 1.4 compliant</li> <li>• Does not support interlaced signal inputs.</li> </ul>
INPUT-3	1x SL-DVI <ul style="list-style-type: none"> <li>• Up to 1920x1200@60Hz input resolution</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 2046 pixels (2046x1207@60Hz)</li> <li>Max. height: 2784 pixels (800x2784@60Hz)</li> </ul> </li> <li>• HDCP 1.4 compliant</li> <li>• Does not support interlaced signal inputs.</li> </ul>
INPUT-4	
INPUT-5	
INPUT-6	
INPUT-7	
INPUT-8	1x DP 1.2 <ul style="list-style-type: none"> <li>• Up to 3840x2160@60Hz/8192x1080@60Hz input resolution</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 8192 pixels (8192x1080@60Hz)</li> <li>Max. height: 8192 pixels (1024x8192@60Hz)</li> </ul> </li> <li>• HDCP 1.3 compliant</li> <li>• Does not support interlaced signal inputs.</li> </ul>
INPUT-9	1x 3G-SDI IN <ul style="list-style-type: none"> <li>• Supports ST-424 (3G) and ST-292 (HD).</li> <li>• Up to 1920x1080@60Hz input resolution</li> <li>• Supports interlaced signal inputs and deinterlacing processing.</li> <li>• Does not support input resolution and bit depth settings.</li> </ul> 1x SDI LOOP

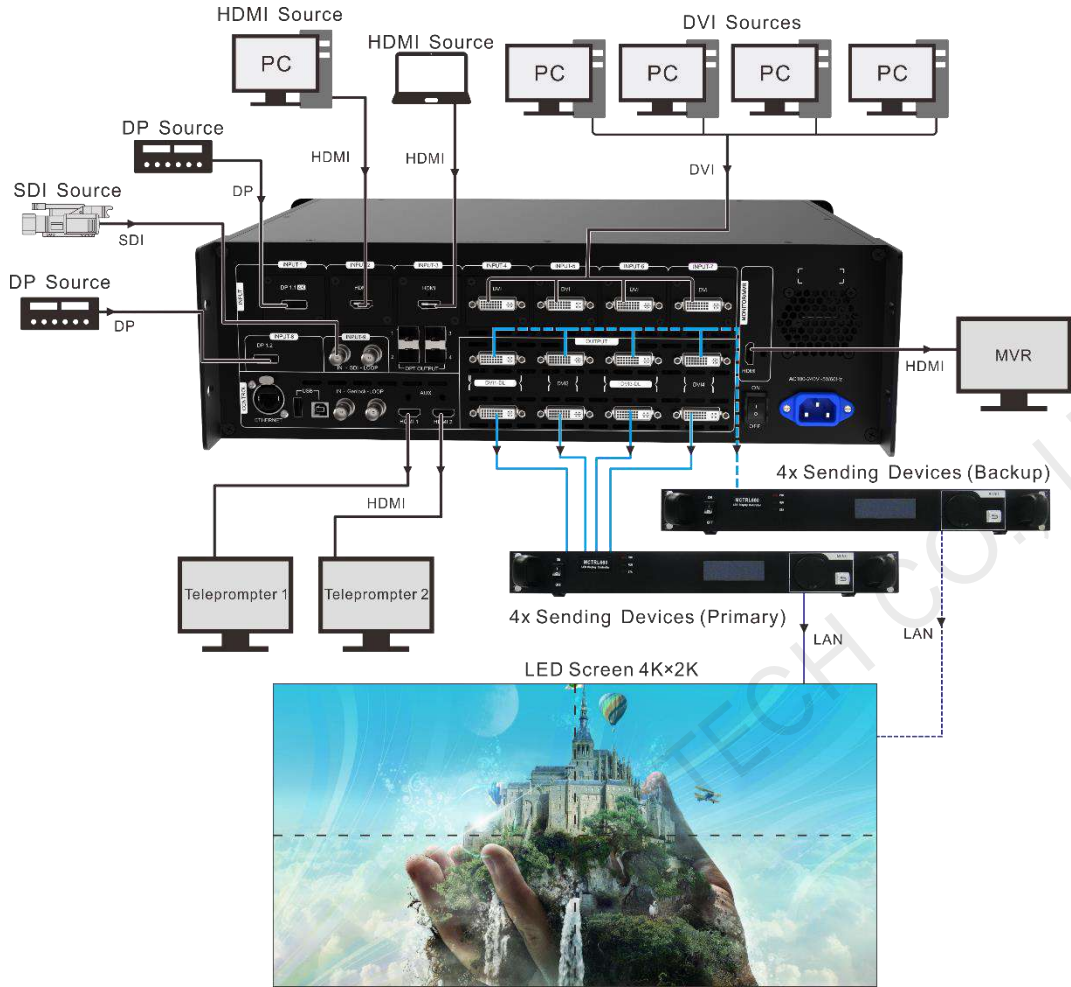
	<ul style="list-style-type: none"> <li>• Loop the 3G-SDI signal.</li> </ul>
<b>Output</b>	
DVI1-DL	2x DVI DVI 1 and DVI 3 serve as the backup for each other. SL mode: <ul style="list-style-type: none"> <li>• Up to 1920x1080@60Hz output resolution of each connector</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 3840 pixels (3840x611@60Hz)</li> <li>Max. height: 3326 pixels (600x3326@60Hz)</li> </ul> </li> </ul> DL mode: <ul style="list-style-type: none"> <li>• Up to 3840x1080@60Hz output resolution of each connector</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 7680 pixels (7680x603@60Hz)</li> <li>Max. height: 3597 pixels (1200x3597@60Hz)</li> </ul> </li> </ul>
DVI3-DL	
DVI2	2x DVI DVI 2 and DVI 4 serve as the backup for each other. SL mode: <ul style="list-style-type: none"> <li>• Up to 1920x1080@60Hz output resolution of each connector</li> <li>• For custom resolutions:               <ul style="list-style-type: none"> <li>Max. width: 3840 pixels (3840x611@60Hz)</li> <li>Max. height: 3840 pixels (600x3326@60Hz)</li> </ul> </li> </ul> DL mode: The connectors are unavailable.
DVI4	
HDMI	1x HDMI 1.3 Monitor the N9 input sources, VE7 input sources, PVW and PGM.
AUX	2x HDMI 1.3 Connect to auxiliary display devices, such as teleprompters.
<b>Control</b>	
ETHERNET	Connect to the control PC or network.
USB	<ul style="list-style-type: none"> <li>• 1x USB 2.0 (Type-B): Connect to the control PC.</li> <li>• 1x USB 2.0 (Type-A): A reserved connector</li> </ul>
IN-Genlock-LOOP	Connect a synchronization signal. <ul style="list-style-type: none"> <li>• IN: Accept the sync signal.</li> <li>• LOOP: Loop the sync signal.</li> </ul>
OPT OUTPUT	4x OPT Connect to the VE7 video input expander to offer 7 more input sources.

**Notes:**

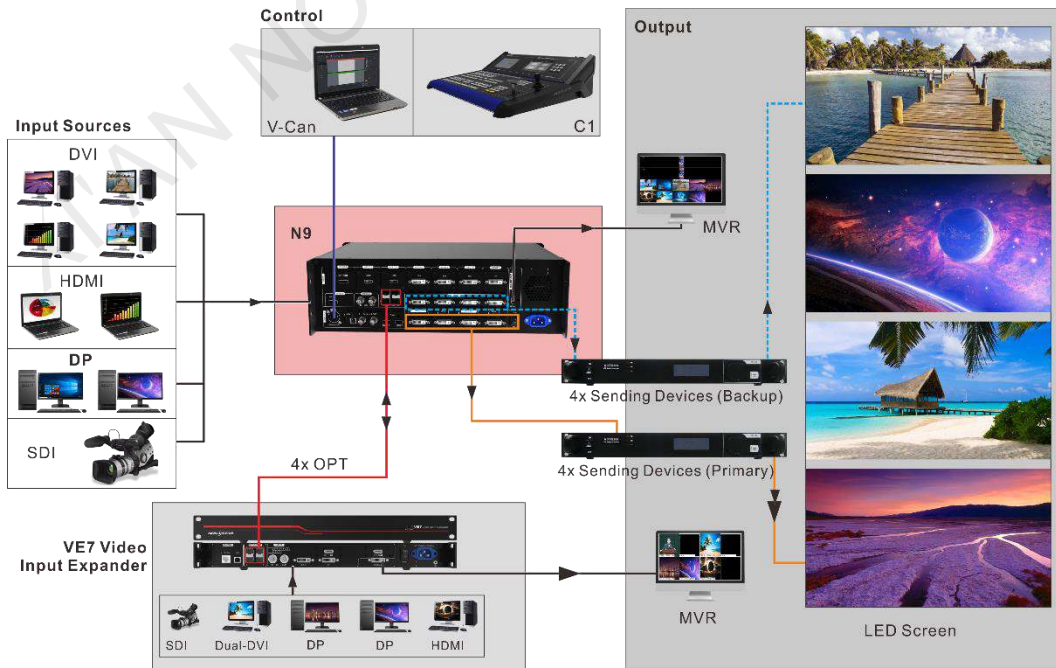
- DP 1.2 supports at most 1 layer.
- DP 1.1 (replaceable by HDMI 1.4 or DL-DVI) supports at most 4 layers.
- SL-DVI, HDMI 1.3 or 3G-SDI supports at most 7 layers.

# Applications

## N9 works independently

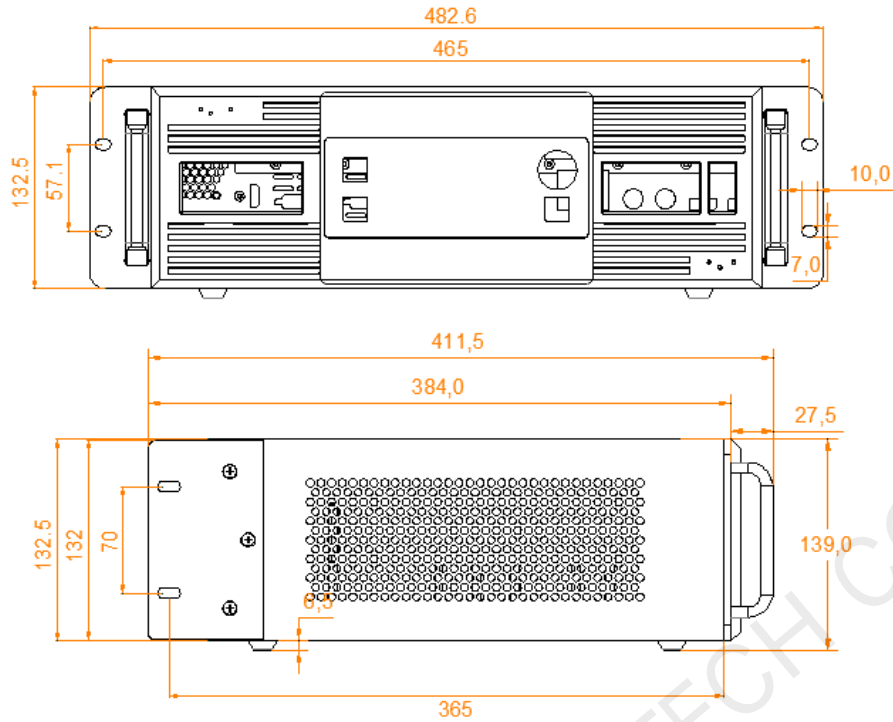


## N9 works with V-Can/C1 and VE7



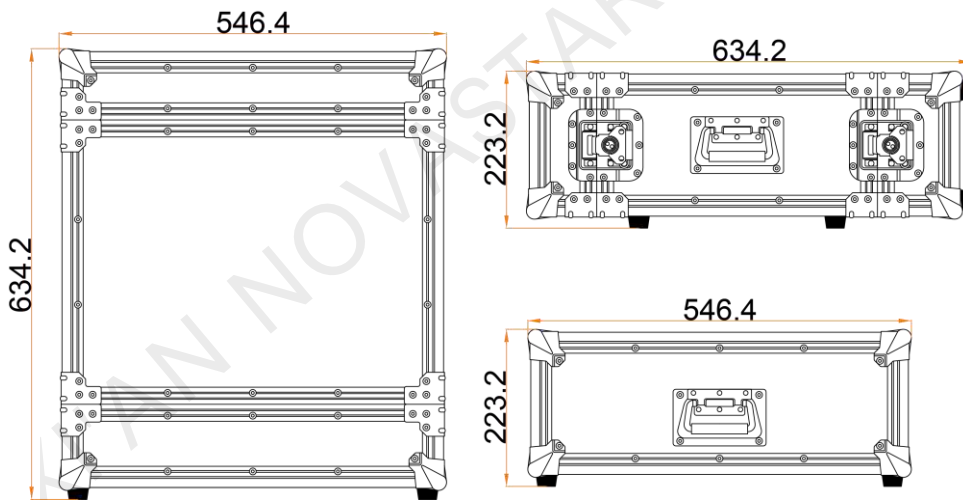
## Dimensions

### N9 Dimensions



Tolerance:  $\pm 0.3$  Unit: mm

### Flight Case Dimensions



Tolerance:  $\pm 5$  Unit: mm

#### Notes:

All the dimensions in the above diagrams are given in millimeters (mm).  
For detailed dimension drawings of the flight case, please contact NovaStar's customer service staff.

## Specifications

Connector Specifications		
Connector	Resolutions	
DP 1.1	800x600@50/60/75/120Hz 1024x768@50/60/75/120Hz 1280x720@50/60/75/120Hz 1280x768@50/60/75/120Hz 1280x800@50/60/75/120Hz 1280x1024@50/60/75/120Hz 1366x768@50/60/75/120Hz 1440x900@50/60/75/120Hz 1600x1200@50/60/75/120Hz 1680x1050@50/60/75/120Hz	1920x1080@50/60/75/120Hz 1920x1200@/50/60/75Hz 2048x640@50/60/75/120Hz 2048x1152@/50/60/75Hz 2048x1536@/50/60/75Hz 2304x1152@/50/60/75Hz 2560x816@50/60/75/120Hz 2560x960@/50/60/75Hz 2560x1600@/50/60Hz 3840x1080@/50/60Hz
DP 1.2	800x600@50/60/75/120Hz 1024x768@50/60/75/120Hz 1280x720@50/60/75/120Hz 1280x768@50/60/75/120Hz 1280x800@50/60/75/120Hz 1280x1024@50/60/75/120Hz 1364x768@50/60/75/120Hz 1440x900@50/60/75/120Hz 1600x1200@50/60/75/120Hz 1680x1050@50/60/75/120Hz 1920x1080@50/60/75/120Hz 1920x1200@50/60/75/120Hz	1920x2160@50/60/75/120Hz 2048x640@50/60/75/120Hz 2048x1152@50/60/75/120Hz 2048x1536@50/60/75/120Hz 2304x1152@50/60/75/120Hz 2560x816@50/60/75/120Hz 2560x960@50/60/75/120Hz 2560x1600@50/60/75/120Hz 3840x1080@50/60/75/120Hz 3840x2160p@50/60Hz 7680x1080@50/60Hz 8192x1080@50/60Hz
HDMI 1.3	800x600@50/60/75/120Hz 1024x768@50/60/75/120Hz 1280x720@50/60/75/120Hz 1280x768@50/60/75/120Hz 1280x800@50/60/75/120Hz 1280x1024@50/60/75/120Hz	1920x1080@50/60/75/120Hz 1920x1200@/50/60/75Hz 2048x640@50/60/75/120Hz 2048x1152@/50/60/75Hz 2048x1536@/50/60/75Hz 2304x1152@/50/60/75Hz
DVI	1366x768@50/60/75/120Hz 1440x900@50/60/75/120Hz 1600x1200@50/60/75/120Hz 1680x1050@50/60/75/120Hz	2560x816@50/60/75/120Hz 2560x960@/50/60/75Hz 2560x1600@/50/60Hz 3840x1080@/50/60Hz
SDI	3G-SDI, downward compatible with HD-SDI and SD-SDI Deinterlacing processing supported 576i@50Hz 480i@59.94Hz 1280x720p@23.98/24/25/29.97/30/50/59.94/60Hz 1920x1035i@59.94/60Hz 1920x1080i@50/59.94/60Hz 1920x1080p@23.98/24/25/29.97/30/50/59.94/60Hz	
Overall Specifications		
Electrical Specifications	Power connector	AC100V~240V~50/60Hz
	Power consumption	95 W
Operating Environment	Operating temperature	0°C to 50°C
	Operating humidity	20% to 90%, non-condensing



	Storage temperature	-20°C to +60°C
Physical Specifications	Dimensions	482.6 mm x 139 mm x 411.5 mm
	Net weight	6.5 kg
	Gross weight	20 kg
Packing Information	Accessories	1x Power cord 1x Ethernet cable 2x DVI cables 1x USB cable 1x HDMI cable 1x HDMI to DVI cable 1x Mini DP to DP cable
	Flight case	634.2 mm x 546.4 mm x 223.2 mm
Certifications		CE, RoHS, FCC, IC
Noise Level (typical at 25°C/77°F)		52 dB(A)

## Video Source Features

Input Connector	Color Depth		Max. Input Resolution
DP 1.2	8-bit	RGB 4:4:4	3840x2160@60Hz 8192x1080@60Hz
		YCbCr 4:4:4	
		YcbCr 4:2:2	
	10-bit	-	Not supported
12-bit	-		
DP 1.1	8-bit	RGB 4:4:4	3840x1080@60Hz
		YCbCr 4:4:4	
		YcbCr 4:2:2	
	10-bit	-	Not supported
12-bit	-		
HDMI 1.3	8-bit	RGB 4:4:4	1920x1080@60Hz
		YCbCr 4:4:4	1920x1080@60Hz
		YCbCr 4:2:2	
	10-bit	-	Not supported
12-bit	-		
DVI	8-bit	RGB 4:4:4	1920x1080@60Hz
3G-SDI	<ul style="list-style-type: none"> <li>• Max. input resolution: 1920x1080@60Hz</li> <li>• Does not support input resolution and bit depth settings.</li> <li>• Supports ST-424 (3G) and ST-292 (HD).</li> </ul>		

## 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.

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