Skyco MEDIA TECHNOLOGIES
CAPTIVATING VISUAL BRILLIANCE

N9

Seamless Switcher

NOVASTAR

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 4K×2K@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 4×1, 1×4 or 2×2.
  - 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
	Input source buttons	Indicate input source status or switch the layer input source. Status LEDs: · On: The input source is accessed and in use. · Dim: The input source is accessed but not in use. · Off: The input source is not accessed or abnormal.
	LCD screen	Display current device status, menus, submenus and messages.
	Knob	· On the home screen, press the knob to enter the main menu screen. · 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. · 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.
	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.
	Layer buttons	Open or close a layer, and indicate the layer status. Status LEDs: · On: The layer is open. · Flashing: The layer is being edited. · Off: The layer is closed. BKG: Open or close the BKG.
	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 · Up to 3840×1080@60Hz input resolution · For custom resolutions: Max. width: 3840 pixels (3840×1211@60Hz) Max. height: 4000 pixels (1054×4000@60Hz) · HDCP 1.4 compliant · Does not support interlaced signal inputs.
INPUT-2 INPUT-3	1x HDMI 1.3 · Up to 1920×1200@60Hz input resolution · For custom resolutions: Max. width: 2046 pixels (2046×1207@60Hz) Max. height: 2784 pixels (800×2784@60Hz) · HDCP 1.4 compliant · Does not support interlaced signal inputs.
INPUT-4 INPUT-5 INPUT-6 INPUT-7	1x SL-DVI · Up to 1920×1200@60Hz input resolution · For custom resolutions: Max. width: 2046 pixels (2046×1207@60Hz) Max. height: 2784 pixels (800×2784@60Hz) · HDCP 1.4 compliant · Does not support interlaced signal inputs.
INPUT-8	1x DP 1.2 · Up to 3840×2160@60Hz/8192×1080@60Hz input resolution · For custom resolutions: Max. width: 8192 pixels (8192×1080@60Hz) Max. height: 8192 pixels (1024×8192@60Hz) · HDCP 1.3 compliant · Does not support interlaced signal inputs.
INPUT-9	1x 3G-SDI IN · Supports ST-424 (3G) and ST-292 (HD). · Up to 1920×1080@60Hz input resolution · Supports interlaced signal inputs and deinterlacing processing. · Does not support input resolution and bit depth settings. 1x SDI LOOP

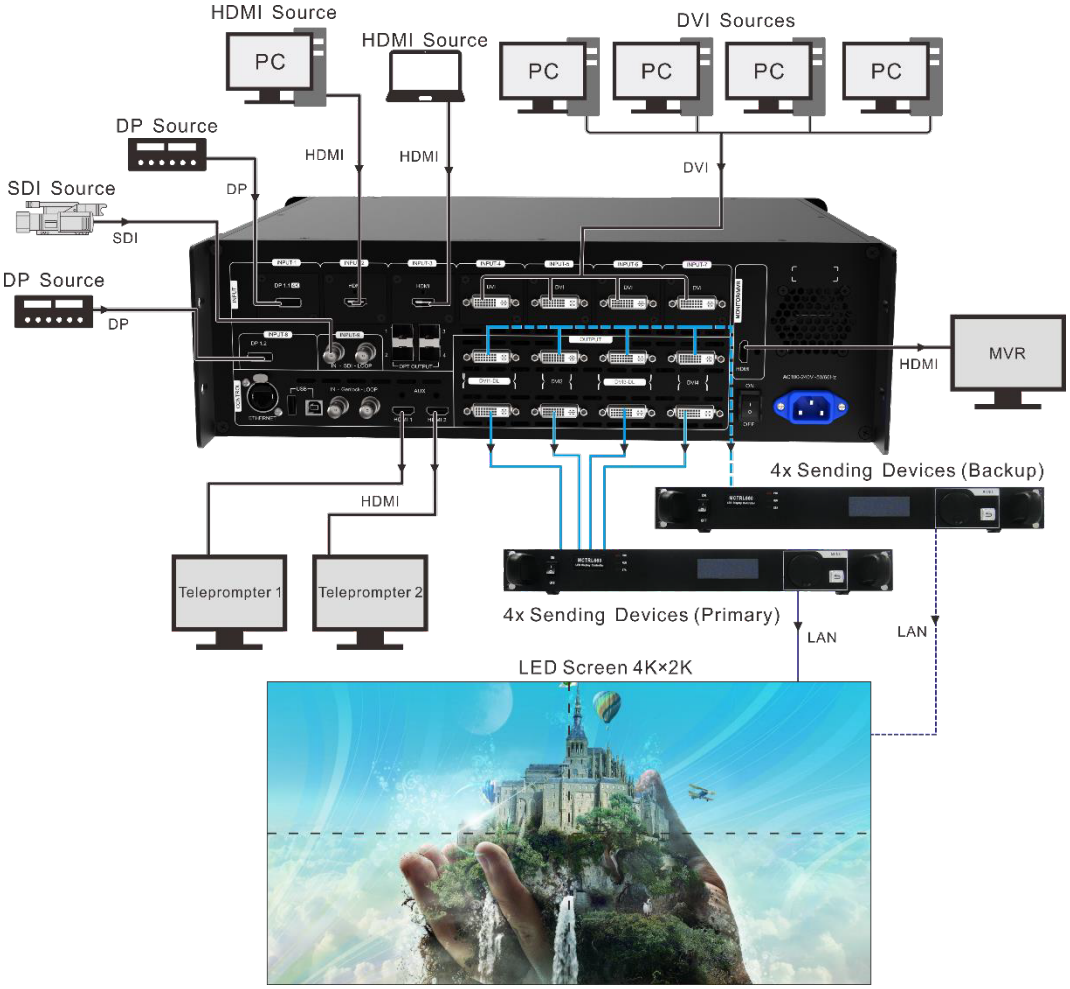
	· Loop the 3G-SDI signal.
Output	
DVI1-DL DVI3-DL	2x DVI DVI 1 and DVI 3 serve as the backup for each other. SL mode: · Up to 1920×1080@60Hz output resolution of each connector · For custom resolutions: Max. width: 3840 pixels (3840×611@60Hz) Max. height: 3326 pixels (600×3326@60Hz) DL mode: · Up to 3840×1080@60Hz output resolution of each connector · For custom resolutions: Max. width: 7680 pixels (7680×603@60Hz) Max. height: 3597 pixels (1200×3597@60Hz)
DVI2 DVI4	2x DVI DVI 2 and DVI 4 serve as the backup for each other. SL mode: · Up to 1920×1080@60Hz output resolution of each connector · For custom resolutions: Max. width: 3840 pixels (3840×611@60Hz) Max. height: 3840 pixels (600×3326@60Hz) DL mode: The connectors are unavailable.
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.
Control	
ETHERNET	Connect to the control PC or network.
USB	· 1x USB 2.0 (Type-B): Connect to the control PC. · 1x USB 2.0 (Type-A): A reserved connector
IN-Genlock-LOOP	Connect a synchronization signal. · IN: Accept the sync signal. · LOOP: Loop the sync signal.
OPT OUTPUT	4x OPT Connect to the VE7 video input expander to offer 7 more input sources.

Notes:

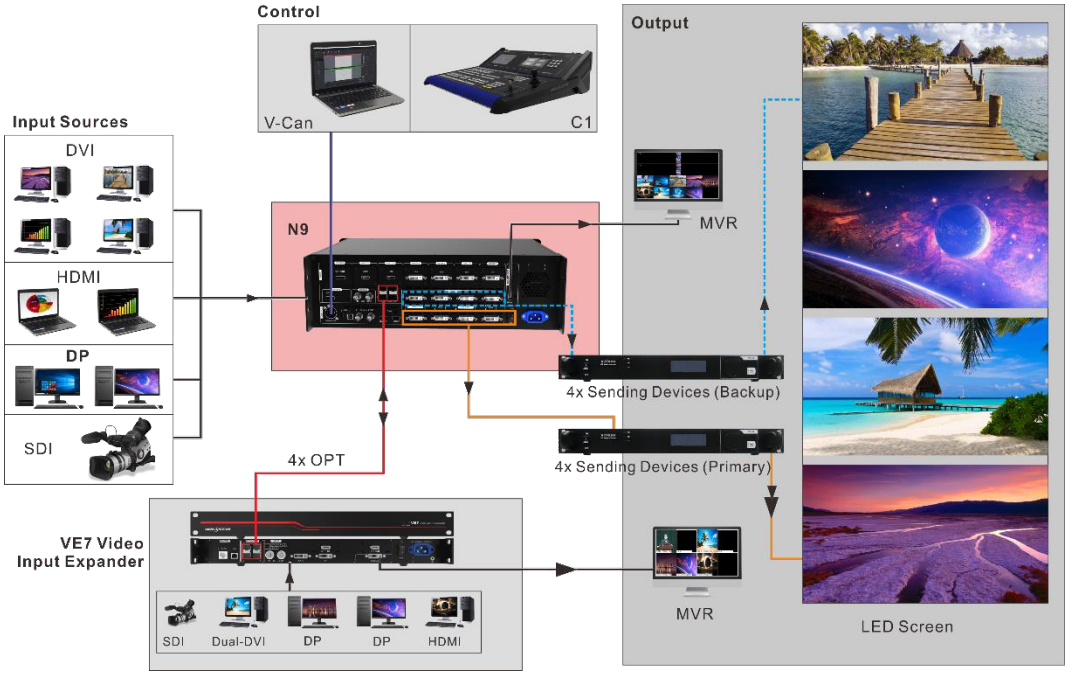
- DP 1.2 supports at most 1 layer.
- DP 1.1 (replaceable by HDMI 1.4 or DL-DVI) supports at most 4 layers.
- SL-DVI, HDMI 1.3 or 3G-SDI supports at most 7 layers.

Applications

N9 works independently

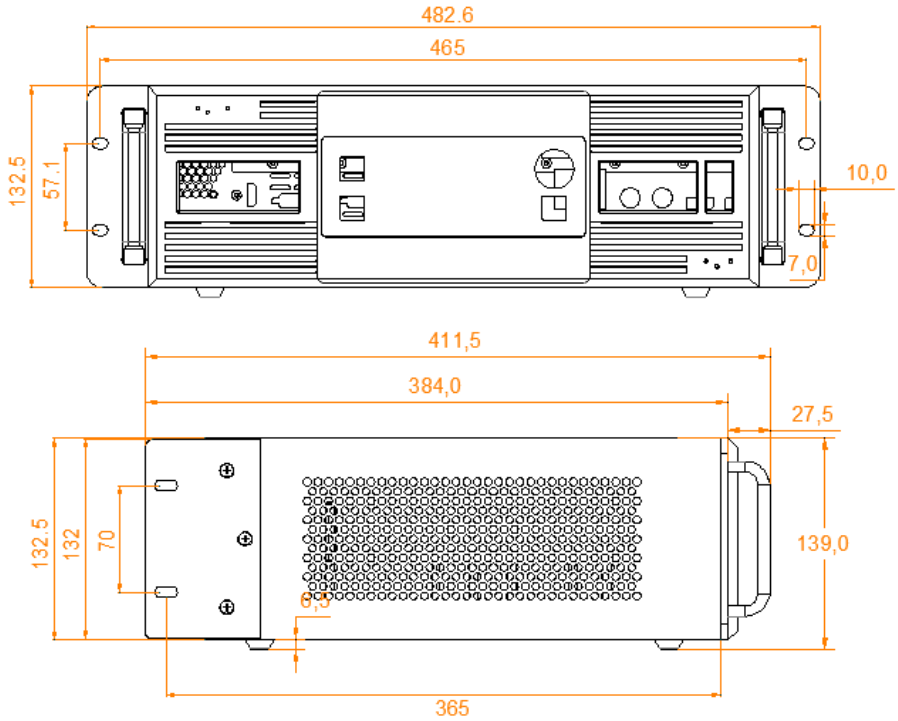


N9 works with V-Can/C1 and VE7



Dimensions

N9 Dimensions



Tolerance: ±0.3 Unit: mm

Flight Case Dimensions

Tolerance: ±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	800×600@50/60/75/120Hz 1024×768@50/60/75/120Hz 1280×720@50/60/75/120Hz 1280×768@50/60/75/120Hz 1280×800@50/60/75/120Hz 1280×1024@50/60/75/120Hz 1366×768@50/60/75/120Hz 1440×900@50/60/75/120Hz 1600×1200@50/60/75/120Hz 1680×1050@50/60/75/120Hz	1920×1080@50/60/75/120Hz 1920×1200@/50/60/75Hz 2048×640@50/60/75/120Hz 2048×1152@/50/60/75Hz 2048×1536@/50/60/75Hz 2304×1152@/50/60/75Hz 2560×816@50/60/75/120Hz 2560×960@/50/60/75Hz 2560×1600@/50/60Hz 3840×1080@/50/60Hz
DP 1.2	800×600@50/60/75/120Hz 1024×768@50/60/75/120Hz 1280×720@50/60/75/120Hz 1280×768@50/60/75/120Hz 1280×800@50/60/75/120Hz 1280×1024@50/60/75/120Hz 1364×768@50/60/75/120Hz 1440×900@50/60/75/120Hz 1600×1200@50/60/75/120Hz 1680×1050@50/60/75/120Hz 1920×1080@50/60/75/120Hz 1920×1200@50/60/75/120Hz	1920×2160@50/60/75/120Hz 2048×640@50/60/75/120Hz 2048×1152@50/60/75/120Hz 2048×1536@50/60/75/120Hz 2304×1152@50/60/75/120Hz 2560×816@50/60/75/120Hz 2560×960@50/60/75/120Hz 2560×1600@50/60/75/120Hz 3840×1080@50/60/75/120Hz 3840×2160p@50/60Hz 7680×1080@50/60Hz 8192×1080@50/60Hz
HDMI 1.3 DVI	800×600@50/60/75/120Hz 1024×768@50/60/75/120Hz 1280×720@50/60/75/120Hz 1280×768@50/60/75/120Hz 1280×800@50/60/75/120Hz 1280×1024@50/60/75/120Hz 1366×768@50/60/75/120Hz 1440×900@50/60/75/120Hz 1600×1200@50/60/75/120Hz 1680×1050@50/60/75/120Hz	1920×1080@50/60/75/120Hz 1920×1200@/50/60/75Hz 2048×640@50/60/75/120Hz 2048×1152@/50/60/75Hz 2048×1536@/50/60/75Hz 2304×1152@/50/60/75Hz 2560×816@50/60/75/120Hz 2560×960@/50/60/75Hz 2560×1600@/50/60Hz 3840×1080@/50/60Hz
SDI	3G-SDI, downward compatible with HD-SDI and SD-SDI Deinterlacing processing supported 576i@50Hz 480i@59.94Hz 1280×720p@23.98/24/25/29.97/30/50/59.94/60Hz 1920×1035i@59.94/60Hz 1920×1080i@50/59.94/60Hz 1920×1080p@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 × 139 mm × 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 × 546.4 mm × 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	3840×2160@60Hz 8192×1080@60Hz
		YCbCr 4:4:4	
		YcbCr 4:2:2	
	10-bit	-	Not supported
	12-bit	-	
DP 1.1	8-bit	RGB 4:4:4	3840×1080@60Hz
		YCbCr 4:4:4	
		YcbCr 4:2:2	
	10-bit	-	Not supported
	12-bit	-	
HDMI 1.3	8-bit	RGB 4:4:4	1920×1080@60Hz
		YCbCr 4:4:4	1920×1080@60Hz
		YCbCr 4:2:2	
	10-bit	-	Not supported
	12-bit	-	
DVI	8-bit	RGB 4:4:4	1920×1080@60Hz
3G-SDI	Max. input resolution: 1920×1080@60Hz Does not support input resolution and bit depth settings. Supports ST-424 (3G) and ST-292 (HD).		

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.