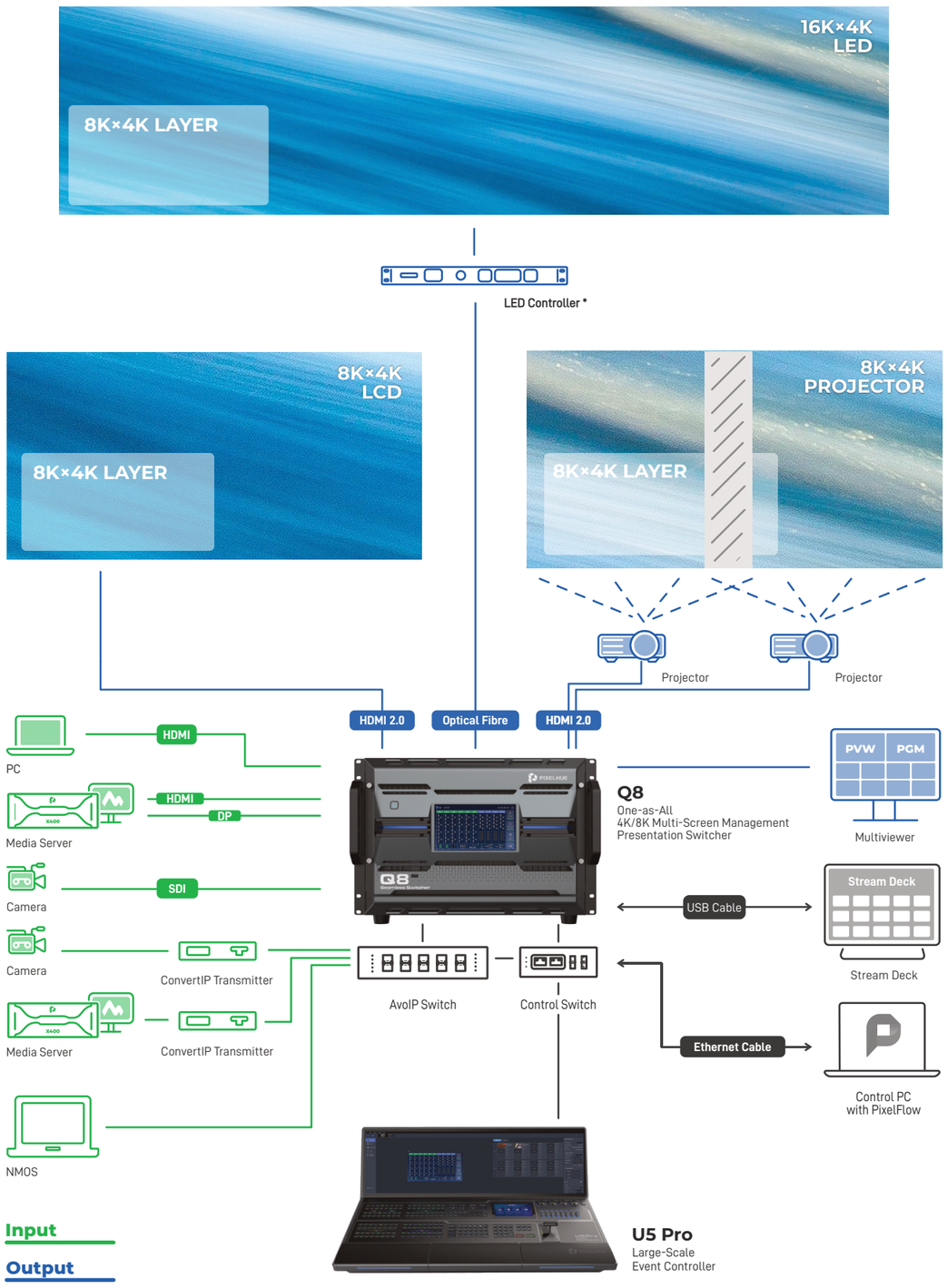
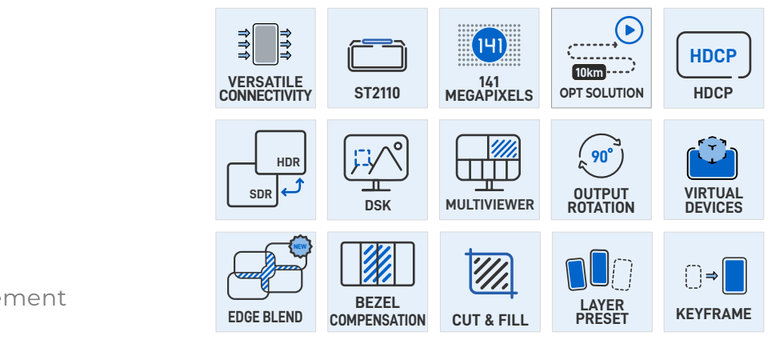
APPLICATION



* Only LED controllers from NovaStar are supported for now.

www.pixelhue.com
info@pixelhue.com
1201A, 8 Caihefang Road, Haidian District, Beijing, China

PIXELHUE



Q8

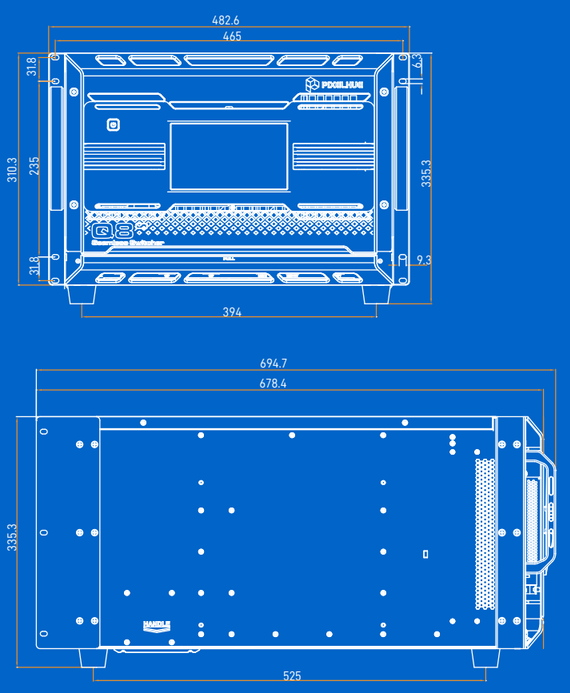
One-as-All
4K Multi-Screen Management
Presentation Switcher

Q8_EN _2024-10-20
This datasheet includes features up to V1.5.0.

PHYSICAL SPECS

Front Screen	7" Touchscreen
Chassis	7U
Dimensions	W 482.6 mm × D 694.7 mm × H 335.3 mm W 19 × D 27.4 × H 13.2 inches
Weight	Fully loaded without accessories 42.6 kg / 93.9 lbs Fully loaded with accessories & flight case 99.7 kg / 219.8 lbs
Electric Parameters	Power connector: 100–240V~, 10A-5A, 50/60Hz Max power consumption: 1400 W
Noise on Average *(@1, 0.75m height)*	45 dB
Operating Environment	Temperature: 0°C to 50°C (32°F to 122°F) Humidity: 0% RH to 80% RH, non-condensing
Storage Environment	Temperature: -20°C to +60°C (-4°F to +140°F) Humidity: 0% RH to 95% RH, non-condensing
Certifications	CE, FCC, IC
Packing Information	• 1x Flight case • 3x Power cables • 2x Ethernet cables (3m) • 1x Screwdriver • 1x Quick Start Guide • 1x Customer Letter • 1X Safety Manual • 1x Certificate of Approval

DIMENSIONS



Unit: mm

imagine *beyond* reality

PIXELHUE

INCREDIBLE PERFORMANCE

The Q8 presentation switcher offers incredible real-time 4K video processing power. It comes with at most 72x 4K input connectors and 64x 4K output connectors, supporting up to 48x 4K concurrent inputs and 16x 4K concurrent outputs. A maximum of 32x 4K mixing layers (true seamless transitions) in switcher mode are supported.

Moreover, the Q8 provides a variety of exceptional features. Multiple different connectors are designed on one input card or output card, including DP 1.2, HDMI 2.0 and 12G-SDI. The ST2110 input card supports 4x SFP25G ports, which not only offers high bandwidth and bitwidth but also allows flexible transmission of video, audio, and control data over IP networks. Additionally, the Q8 boasts the 8K video processing capability. With these capabilities, the Q8 enables you to design and manage all live events easily and economically. Thanks to the *VPU-based architecture, the number of layers on a single output card can be doubled, eliminating any concerns about running out of layer capacity.

LONGER TRANSMISSION DISTANCE, LOWER COST

In addition to the ability of outputting content from the 4K connectors, the Q8 presentation switcher is also capable of transmitting signals to the LED controllers from NovaStar[1] over a long distance (up to 10 km with single-mode optical fiber) without fiber converters. This method not only ensures the signal stability but also lowers the transmission cost, making it a perfect fit for long-distance signal transmission.

1. Currently supported controllers are VX1000, VX600, VX400, H series, MX40 Pro, MCTRL4K, and NovaPro UHD Jr.

SUPPORTED RESOLUTIONS

	Input	Bit Depth	Sampling Format	Supported Resolutions	Supported Bandwidth
4K	HDMI 2.0	8bit	RGB 4:4:4	4096×2160@60Hz 8192×1080@60Hz	18 Gbps
			YCbCr 4:4:4		
			YCbCr 4:2:2		
		10bit 12bit	RGB 4:4:4	4096×2160@30Hz 4096×1080@60Hz	
			YCbCr 4:4:4		
			YCbCr 4:2:2	4096×2160@60Hz	
	DP1.2	8bit 10bit 12bit	RGB 4:4:4 YCbCr 4:4:4 YCbCr 4:2:2	8192×1080@60Hz 4096×2160@30Hz 3840×2160@60Hz	21.6 Gbps
	12G-SDI	8bit 10bit 12bit	YCbCr 4:2:2	4096×2160@60Hz	11.88 Gbps
	SFP25G	8bit 10bit	RGB 4:4:4 YCbCr 4:4:4 YCbCr 4:2:2	4096×2160@60Hz	25 Gbps

Q8

One-as-All
4K Multi-Screen Management
Presentation Switcher

VARIOUS CONTROL OPTIONS

Multi-Control

The Q8 is very easy to operate and supports flexible control options: versatile event controller U5/U5 Pro, all-new event management software PixelFlow, and third-party control system Stream Deck (Companion integrated into the Q8). You can use the control methods to realize various operations, such as screen preset related operations, blackout, freeze, and PVW to PGM operations. What's more, multiple switchers can be controlled simultaneously by a single event controller or PC with PixelFlow when they are on the same LAN and in the same project. This makes on-site control and operations a breeze.

EASY-TO-USE PixelFlow

Easy to Use

The Q8 works with the new PixelFlow, which has fully upgraded architecture, graphical user interface, interaction and ease of use designs. The new architecture enables the software to run 24/7 stably. The visualized user interface is adaptive to different screens of event controllers and computer, and the software allows you to change the skins of event controller buttons with one click, giving you a great look and feel. What's more, the event controller encoders and faders can control the software parameters, making operations smoother. With distinct function areas, hover menus and almost all the functions required in an event, the software guides you from beginning to end of any events with as little complex operation as possible.

ALL-ROUND SUPERB RELIABILITY

The Q8 presentation switcher supports full-link backup, from input source backup to device backup and power backup, to safeguard your live events. Once the input source is not stable or disappears, it will be switched to the backup source seamlessly. When the primary device fails, the backup device will take over the work immediately to ensure uninterrupted operation. Switching from the primary to backup input source or device with no downtime makes the solution highly reliable and worry-free.

Note:
Specifications subject to change without prior notice.

The functions marked with * will be implemented in future updates.

MODULAR

Input Card

Q8_HDMI2.0+DP1.2+12G-SDI Input Card

4x HDMI 2.0
4x DP 1.2
4x 12G-SDI

- 8x 4K×2K concurrent inputs per input card
- HDMI 2.0
  - Up to 4K×2K@60Hz 10bit 4:2:2, or 4K×2K@60Hz 8bit 4:4:4
  - Support for processing of 8-bit, 10-bit and 12-bit inputs
  - Support for 4:2:0, 4:2:2 and 4:4:4 inputs
  - Support for processing of Full and Limited range videos
  - Support for HDR video inputs
  - HDCP 1.4 and HDCP 2.2 compliant
  - Support for deinterlacing processing
  - Custom resolutions
    - Maximum width: 8192 pixels
    - Maximum height: 8192 pixels
- DP 1.2
  - Up to 4K×2K@60Hz 10bit 4:4:4, or 4K×2K@60Hz 8bit 4:4:4
  - Support for processing of 8-bit, 10-bit and 12-bit inputs
  - Support for 4:2:2 and 4:4:4 inputs
  - Support for processing of Full and Limited range videos
  - Support for HDR video inputs
  - HDCP 1.3 and HDCP 2.2 compliant
  - Custom resolutions
    - Maximum width: 8192 pixels
    - Maximum height: 8192 pixels
- 12G-SDI
  - Support for ST-2082 (12G), ST-2081 (6G), ST-424 (3G), ST-292 (HD) and ST-259 (SD) standard video inputs
  - Compatible with SD-SDI, HD-SDI, 3G-SDI and 6G-SDI
  - Support for interlaced signal inputs
  - No support for EDID management or bit depth settings

Q8_ST2110_4xSFP25G Input Card_I

4x SFP25G

- 2 primary and 2 backup inputs per input card
- Standard: Supports SMPTE ST 2110 (-10, -20) and SMPTE 2059 (-1, -2) standards.
- Backup: Supports SMPTE 2022-7 standard.
- Resolutions:
  - Max resolution: 4096×2160@60Hz
  - Min resolution: 800×600@60Hz
- SDP management: Supports VESA standard input resolution.
- NMOS management: NMOS discovery and control according to standards IS-04 and IS-05
- Color gamut: BT.601/BT.709/BT.2020
- IP address: IPv4 DHCP and static IP
- Multicast protocol: IGMPv3, IGMPv2
- Ethernet:
  - 25 GbE IEEE 802.3cc (25GBASE-LR)
  - 25 GbE IEEE 802.3by (25GBASE-SR)

Output Card

Q8_HDMI2.0+12G-SDI+Fiber Output Card

4x HDMI 2.0
4x 12G-SDI
8x 10G OPT

- The 4x HDMI 2.0 and 4x 12G-SDI connectors are divided into 4 groups. Each group includes 1x HDMI 2.0 and 1x 12G-SDI connectors, and one connector copies the output of the other. The 12G-SDI connector supports only standard resolutions under the protocol. When the HDMI 2.0 connector is set to a custom resolution, the 12G-SDI connector does not output.
  - Connector 1 (HDMI 2.0) and connector 5 (12G-SDI) are in a group.
  - Connector 2 (HDMI 2.0) and connector 6 (12G-SDI) are in a group.
  - Connector 3 (HDMI 2.0) and connector 7 (12G-SDI) are in a group.
  - Connector 4 (HDMI 2.0) and connector 8 (12G-SDI) are in a group.
- 4x HDMI 2.0
  - Up to 4K×2K@60Hz 8bit 4:4:4 output
  - Support for 8-bit and 10-bit output settings
  - Support for 4:2:0, 4:2:2 and 4:4:4 output settings
  - Support for YCbCr and RGB color space settings
  - Support for output of HDR video.
  - Support for color gamut adjustment
  - Support for interlaced signal outputs
  - Custom resolutions
    - Maximum width: 8192 pixels
    - Maximum height: 8192 pixels
- 4x 12G-SDI
  - Compatible with SD-SDI, HD-SDI, 3G-SDI and 6G-SDI
  - Support for interlaced signal outputs
- 8x 10G OPT
  - Support for single-mode and multi-mode optical outputs
  - Transmission distance up to 10km in single mode
  - OPT ports copy outputs on video connectors
    - OPT 1 and OPT 2 copy the output on connector 1 or 5.
    - OPT 3 and OPT 4 copy the output on connector 2 or 6.
    - OPT 5 and OPT 6 copy the output on connector 3 or 7.
    - OPT 7 and OPT 8 copy the output on connector 4 or 8.

KEY FEATURES

Switcher working mode
Up to 6x input cards with up to 72x 4K input connectors and up to 48x 4K concurrent inputs
Up to 4x output cards with up to 48x 4K output connectors available (4x HDMI 2.0 or 4x 12G-SDI + 8x OPT per output card) and up to 16x 4K concurrent outputs
A maximum of 32x 4K mixing layers (true seamless transitions) in switcher mode
Multiple different connectors on one input or output card, such as HDMI 2.0, DP 1.2 and 12G-SDI
4x SFP25G ports on the ST2110 input card , offering high bandwidth and bitwidth
Multi-screen configuration and control
Bezel compensation
Edge blending, supporting both simple and complex projection scenarios
Virtual pixel function for convenient layer configuration
Simple control via event controller, PixelFlow, and Stream Deck (Companion integrated into the Q8)
Device backup, input backup and output card backup, seamless switching from primary to backup
7" touchscreen on the front panel, support for real-time device status monitoring
Optical copying output supported, 10km long-distance signal transmission over single-mode optical fiber
4:4:4 4K@60Hz 10-bit internal processing
Cross-connector layer within a card does not occupy extra resources, full screen roaming
Free conversion between SDR, HDR10 and HLG
Layer resource management
Up to 1024 screen presets and 1024 layer presets
Layer effects: mask, border, flip, copy, shadow, cut & fill, KeyFrame and more

Still image management
Advanced DSK capability for input: smart key, luma key and chroma key
Individual RGB component adjustment for image quality parameters
Sync with input and external bi-level or tri-level Genlock signal
Live input view in PixelFlow
Custom timing and frame rate on outputs
AOI function
Input EDID management
Custom layout of output connectors
Output connector copying to quickly offer multiple same sources for backend devices
90° output rotation for creative display
Output mapping to enable easier screen configuration
Batch change of resolutions and frame rates of output connectors
HDCP 1.3, HDCP 1.4 and HDCP 2.2 for full-link content protection with a global switch for all inputs or outputs
Multiple backup modes, device diagnostics, project file import and export, log export and 2+1 power backup for super stability and reliability
Compatible with EDID on Mac
*Built-in VPU function allows layer resources of one output card to be used by another output card
*Two Q8 devices linkable for input source sharing and uniform output mosaic and management
*48kHz 64x64 Dante™ audio networking hardware and support

Note:
Specifications subject to change without prior notice.
The functions marked with * will be implemented in future updates.

TECHNICAL FEATURES

Inputs

- Up to 48x 4K concurrent inputs through 6 input cards
- Standard, custom and advanced EDID settings
  Custom resolutions: 3840×2160@60Hz, 4096×2160@60Hz, 8192×1080@60Hz, etc.
- Input source deinterlacing processing on 4 connectors of each input card
- Input source cropping
- Status LED indicators provided for easy troubleshooting

Outputs

- Up to 16x 4K concurrent outputs through 4 output cards
- Standard, custom and advanced output timing settings
- Output width up to 8192 pixels, better choice for LED applications
- Status LED indicators provided for easy troubleshooting

Multiviewer

- Two dedicated output connectors configured as Multiviewer connectors, with resolutions adjustable
- Independent and copying modes: The two connectors display different Multiviewer images, or the HDMI 2 copies the HDMI 1 output
- Monitor all inputs and screens (PVW and PGM)
- Customizable layouts for easy use
- UMD display and color adjustment
- Border adjustment for Multiviewer windows

Screens

- Output configured as single screens or edge-blended widescreens
- Multi-screen management and control
- Bezel compensation
- Edge blending, supporting both simple and complex projection scenarios
- Irregular screen mosaic and output AOI function, ideal for complex and irregular LED screen applications
- The sync source can be set independently for each screen

Transition & Effects

- Luma key and chroma key
- Cut and fade transitions
- Customizable transition durations
- PVW to PGM via Take, Cut or T-bar operation
- Copy or Swap mode for PVW to PGM transition

Layers

- Each Q8 supports up to 32x 4K mixing layers in switcher mode
- Full screen roaming supported
- Fade and Cut effects for PVW to PGM transition
- Layer effects: mask, border, flip, copy, shadow, cut & fill, KeyFrame and more
- Layer preset: All (or a portion) of the current layer's properties (such as input source, position, size, effects, etc.) can be saved as a layer preset in PixelFlow for easy recall

Still Image Management

- Still images can be imported or captured from input or output
- Unlimited still image quantity in 1 GB storage space
- Still images can be used as BKG and still layers
- Independent BKG for each screen
- BKG filling the whole screen by default, with adjustable position and size
- Up to 255 BKGs (max 1 GB in total) supported

Processing

- FPGA based high performance image processing architecture with SuperView scaling engine inside
- Ultra-low latency, as low as 1 frame in proper configuration
- BT.601, BT.709, BT.2020, DCI-P3 color space processing support
- Advanced keying capability: smart key, chroma key and luma key
- Compatible with HDCP 1.3, HDCP 1.4 and HDCP 2.2

Control Options

- Event controller U5/U5 Pro
- Event management software PixelFlow
- Third-party control system Stream Deck (Companion integrated into the Q8)

PixelFlow Functionalities

- Long-term stable running
- Upgraded and visualized UI, adaptive to U5/U5 Pro/PC screens
- One click to change skins of U5/U5 Pro buttons
- Software parameter controllable by U5/U5 Pro encoders or faders
- Distinct function areas and hover menu for ease of use
- Fully functional simulator for offline configuration and practice