

# Quantum Connect Series

HDCP-COMPLIANT VIDEOWALL PROCESSORS

**TRUE 4K**

High Performance Multi-Graphic Processing for Videowalls

- ▶ Videowall processing for videowalls with up to six displays
- ▶ HDCP-compliant inputs and outputs support resolutions up to 1920x1200 and 1080p/60
- ▶ High speed, dedicated video/graphic bus delivers real-time performance
- ▶ High quality image upscaling and downscaling
- ▶ Bezel compensation for flat-panel displays
- ▶ Quantum Connect 84 and Quantum Connect 126 easily integrate into various environments that incorporate a 4K display such as lobbies, auditoriums, and simulation



**Extron Electronics**  
INTERFACING, SWITCHING AND CONTROL

# Introduction

The Extron **Quantum® Connect Series** are HDCP-compliant videowall processors that are ideal for videowalls with two, four or six displays. They deliver the same high quality scaling and real-time performance as Extron's flagship Quantum Elite processors. They deliver powerful video processing and high performance scaling technology capable of producing superior quality images. Quantum Connect 82 and Quantum Connect 84 incorporate a 4U chassis and support eight HDMI inputs with two or four HDMI outputs. Quantum Connect 126 features a 6U chassis with solid-state storage drives and dual-redundant power supplies. It supports 12 HDMI inputs and six HDMI outputs. All models are ideal for crafting professional quality videowall presentations in public spaces, digital signage in retail environments, and control rooms.

The Quantum Connect Series maintains optimal full frame rate performance with a high-speed, 10 Gbps RAPT - Real-Time Asymmetric Packetized Transfer video/graphic bus that allows all inputs to be processed simultaneously, while preserving real-time control response and optimal image performance.

The Quantum Connect Series meet the input and output requirements of many popular configurations for small videowalls. For larger videowalls, as well as applications requiring greater scalability and the flexibility to expand over time, AV integrators, system designers, and consultants should consider the Quantum Elite or Quantum Ultra processors.

MODEL COMPARISON			
	Quantum Connect 82	Quantum Connect 84	Quantum Connect 126
HDMI Inputs	8	8	12
HDMI Outputs	2	4	6
Chassis Size	4U	4U	6U
Dual-Redundant Power Supplies			✓
Solid-State Storage			✓

## FEATURES

### Videowall processing for videowalls with up to six displays

### HDCP-compliant HDMI inputs and outputs support resolutions up to 1920x1200 and 1080p/60

HDCP-encrypted content can be displayed on HDCP-compatible displays.

### High speed, dedicated video/graphic bus delivers real-time performance

The Quantum Connect Series features a 10 Gbps Real-Time Asymmetric Packetized Transfer - RAPT video/graphic bus that allows for simultaneous processing of numerous, high resolution input signals while maintaining real-time operational performance as well as optimal image quality at full frame rates.

### High quality image upscaling and downscaling

The Quantum Connect Series includes high performance image scaling technology offering both high quality upscaling and downscaling of HDMI signals.

### Bezel compensation for flat-panel displays

Adjustable compensation extends the displayed image "behind" screen bezels, accurately presenting sources which span multiple displays.

### Quantum Connect 84 and Quantum Connect 126 integrate easily into environments that incorporate a 4K display such as lobbies, auditoriums, and simulation environments

Quantum Connect 84 and Quantum Connect 126 are optimized for use with 4K displays, with the capability to window standard definition, high definition, and UHD sources across a display with a resolution up to 3840x2160.

### Restriction-free windowing

Accurate and flexible source placement provides unrestricted creativity when designing window layouts, including the ability to duplicate sources multiple times at various sizes on the displays.

### Easy-to-use configuration and control software —

Quantum Connect's easy-to-use control software reduces configuration and preset programming time with a task-oriented, intuitive interface.

### Powerful system control

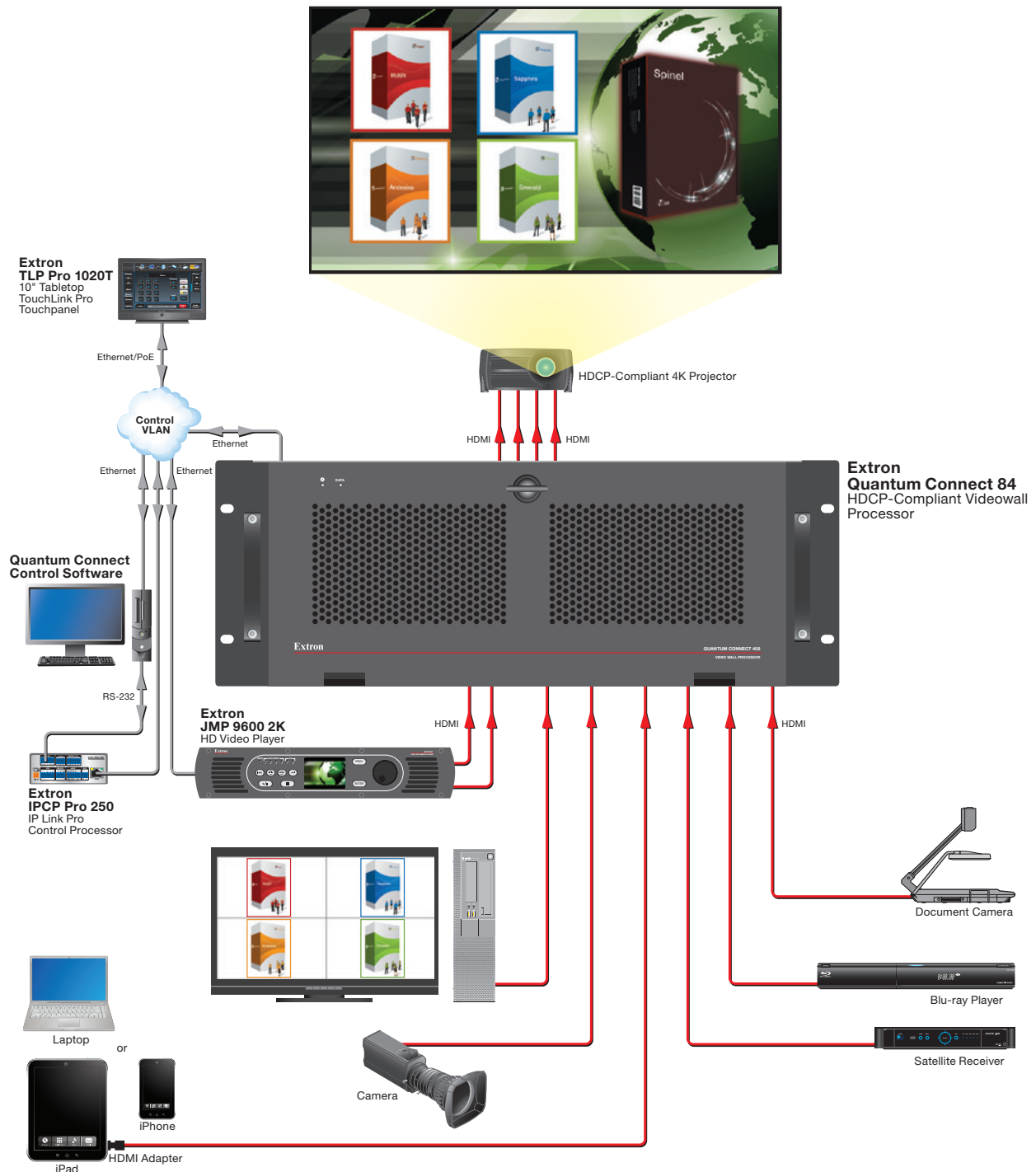
A powerful remote control protocol provides access to preset selection, source window size and positioning, and many more features. The remote control protocol is easy to understand and makes Quantum Connect simple to integrate with any control system.



# Applications

## Public Lobby Display Videowall System

This corporate auditorium provides a venue for a large company to hold employee gatherings or shareholder meetings. A Quantum Connect 84 with four HDMI outputs delivers signals to a UHD projector, and provides the ability to display any or all of the eight HDMI inputs simultaneously. Corporate promotions are supported with a desktop PC and an Extron JMP 9600 2K video player. For live presentations, a video camera provides a closer view of the presenter while a laptop or mobile device, a Blu-ray player, and a document camera provide supporting materials. A satellite receiver is used for news broadcasts or other relevant programming. System control is facilitated by an Extron TLP Pro 1020T 10" TouchLink® touchpanel and an Extron IPCP Pro 250 IP Link® Ethernet control processor, which send RS-232 control messages to the Quantum Connect Control Software and IP control to the Extron JMP 9600 HD video player.



# Specifications

## TRUE 4K SPECIFICATION

### Max 4K Capabilities

Resolution and Frame Rate	Chroma Sampling	Max Bit Depth per Color
3840 x 2160 at 60 Hz	4:4:4	8 bit

Frame rate	50, or 60 fps
Chroma sampling <sup>1</sup>	4:4:4 or 4:2:2
Color bit depth <sup>1</sup>	8 bits per color
Signal type	DVI 1.0, HDMI 1.4, and HDCP 1.3
Max. video data rate	4.95 Gbps (1.65 Gbps per color) per connection
<b>NOTE:</b> <sup>1</sup> Subject to the maximum data rate limit. Use our calculator at <a href="http://www.extron.com/4Kdata">www.extron.com/4Kdata</a> to determine video parameters supported by this data rate.	
<b>NOTE:</b> This product requires four parallel connections to achieve 4K at 50 or 60 fps.	

### VIDEO INPUT

<b>Number/signal type</b>	
Quantum Connect 82 and 84	8 HDMI (HDCP compliant)
Quantum Connect 126	12 HDMI (HDCP compliant)
<b>Connectors</b>	
Quantum Connect 82 and 84	8 female HDMI
Quantum Connect 126	12 female HDMI
<b>Horizontal frequency</b>	31 kHz to 100 kHz
<b>Vertical frequency</b>	24 Hz to 85 Hz
<b>Resolution range</b>	640x480 to 1920x1200, 480p, 576p, 720p, 1080i, or 1080p
<b>Formats</b>	RGB and YCbCr digital video
<b>Standards</b>	DVI 1.0, HDMI 1.4, HDCP 1.3

### VIDEO PROCESSING

<b>Maximum data rate</b>	4.95 Gbps (1.65 Gbps per color)
<b>Colors</b>	16.78 million (8 bit processing)

### VIDEO OUTPUT

<b>Number/signal type</b>	
Quantum Connect 82	2 HDMI (HDCP compliant)
Quantum Connect 84	4 HDMI (HDCP compliant)
Quantum Connect 126	6 HDMI (HDCP compliant)
<b>Connectors</b>	
Quantum Connect 82	2 female HDMI
Quantum Connect 84	4 female HDMI
Quantum Connect 126	6 female HDMI
<b>Vertical frequency</b>	50 Hz, 60 Hz
<b>Scaled resolutions</b>	640x480 <sup>1,2</sup> , 800x600 <sup>1,2</sup> , 848x480 <sup>1,2</sup> , 1024x768 <sup>1,2</sup> , 1152x870 <sup>1,2</sup> , 1280x768 <sup>1,2</sup> , 1280x800 <sup>1,2</sup> , 1280x1024 <sup>1,2</sup> , 1360x768 <sup>1,2</sup> , 1366x768 <sup>1,2</sup> , 1440x900 <sup>1,2</sup> , 1400x1050 <sup>1,2</sup> , 1408x1050 <sup>1,2</sup> , 1600x1200 <sup>1,2</sup> , 1680x1050 <sup>1,2</sup> , 1920x1200 <sup>1,2</sup> HDTV: 720p <sup>1,2</sup> , 1080p <sup>1,2</sup> <sup>1</sup> = at 50 Hz, <sup>2</sup> = at 60 Hz
<b>Standards</b>	DVI 1.0, HDMI 1.4, HDCP 1.3

### COMMUNICATIONS — PROCESSOR/DECODER/SCALER

<b>Ethernet ports</b>	1 female RJ-45 connector for control, networked
<b>Ethernet data rate</b>	10/100Base-T, half/full duplex with autodetect
Quantum Connect 82 and 84	80 GB (1 IDE drive)
Quantum Connect 126	C drive: 512 MB (1 solid state drive) D drive: 256 MB (1 solid state drive)
<b>Program control</b>	Extron Quantum Connect control/configuration software for Windows

### GENERAL

<b>Power supply</b>	
Quantum Connect 82 and 84	Internal Input: 100-240 VAC, 50-60 Hz
Quantum Connect 126	Internal Input: (2*) 100-240 VAC, 50-60 Hz *A redundant power supply is standard
<b>Power consumption</b>	300-500 watts (varies with configuration)
<b>Mounting</b>	
Rack mount	Yes
<b>Enclosure dimensions</b>	
Quantum Connect 82 and 84	7.0" H x 17.1" W x 19.3" D (4U high, full rack wide) (17.8 cm H x 43.3 cm W x 49.0 cm D) (Depth excludes connectors and handles. Width excludes built-in rack ears.)
Quantum Connect 126	10.5" H x 17.1" W x 19.3" D (6U high, full rack wide) (26.67 cm H x 43.3 cm W x 49.0 cm D) (Depth excludes connectors and handles. Width excludes built-in rack ears.)
Quantum Connect 82 and 84	41 lbs (18.6 kg)
Quantum Connect 126	51 lbs (23.1 kg)
<b>Regulatory compliance</b>	
Safety	CE, c-UL, UL
EMI/EMC	CE, FCC Class A
Environmental	Complies with the appropriate requirements of RoHS, WEEE.
<b>Warranty</b>	3 years parts and labor

**NOTE:** All nominal levels are at ±10%.

Model	Version Description	Part number
Quantum Connect 82	8 Input, 2 Output Videowall Processor	60-1114-11
Quantum Connect 84	8 Input, 4 Output Videowall Processor	60-1114-12
Quantum Connect 126	12 Input, 6 Output Videowall Processor	60-1114-13

For complete specifications, please go to [www.extron.com](http://www.extron.com)  
Specifications are subject to change without notice.

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