



Quantum Elite Powers Immersive Display at GE's New Customer Experience Center

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Mark McPherson
Advanced Vice President

GE is widely recognized for championing leading-edge technologies that make clean, renewable energy an everyday reality. Reinforcing GE's mantra of Imagination at Work®, GE's Digital Energy division opened the \$40 million, 200,000 square foot Grid IQ™ Global Innovation Center in Markham, Ontario to promote its next-generation energy management grid to utility providers.

Stunning, Immersive Content

GE incorporated Extron Quantum® Elite processing with its high quality scaling, real-time performance, and precise image alignment controls at the Innovation Center to manage multiple high resolution sources on a 60 foot wide immersive display system, producing an informative and visually stunning experience for its customers.

Advanced Design and Integration

To help bring the facility to life, GE turned to Canadian AV integrator, Advanced, to envision, design, and install an integrated AV and IT solution that encompasses 55 rooms within the Global Innovation Center, including its impressive Customer Experience Center.

The Customer Experience Center is a fully interactive, educational showcase that walks customers through GE's 125 year legacy of innovation, and provides a host of hands-on activities featuring the latest GE technologies, a virtual 3D substation with interactive power management challenges, and the “Load Shedding Simulation,” where users can create a rolling blackout scheme to simulate what happens during power outages.



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

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Exploring the Grid

The showpiece of the Customer Experience Center is the Grid Explorer, an interactive, 60-foot, 180 degree concave videowall comprised of 175 energy-efficient Prysm Laser Phosphor Displays – LPDs, driven by an Extron Quantum Elite videowall processing system.

The Grid Explorer takes customers on an interactive and dynamic 3D journey through power generation, transmission, and distribution, providing an exciting and in-depth look at innovative solutions GE provides for the power utility industry. Viewers in this immersive experience see the entire power-generating process from start to finish and can stop and interact with any of the individual scenes, which are played out in multiple zones across the display.

Challenges and Solutions

While designing the Grid Explorer, a challenge that faced Advanced was presenting a single image across an extremely wide, 13.5 million pixel videowall while still retaining a quality image. Given the short viewing distance, typically just a few feet, any scaling artifacts or inadequacies in the processing would be apparent and diminish the immersive experience intended for the customer.

Part of the solution was to produce Grid Explorer content in sections and send them to Quantum Elite as multiple sources, which would be stitched into a single image across the wall. However, doing this effectively was a challenge due to the near seamless appearance of the LPD displays, whose ultra-thin separation allowed no tolerance for errors in image alignment.

When discussing why Advanced chose the Quantum Elite for this installation, Mark McPherson, Vice President at Advanced, stated: “We

needed a processor that could create the illusion of one continuous image across a videowall that had no screen bezels to cover the stitch points between sources. We selected the Quantum Elite videowall processor, and its best-in-class source windowing, picture quality, and real-time performance did the job, and did it convincingly.”

Five PCs each provide one section of the image presented across the videowall. Each section is output at 1920x1080 to the Quantum Elite, which assembles the sources for display on the videowall. Seven outputs from the Quantum Elite system feed 1920x1080p signals to seven LPD processors, each of which drives a 25 screen, 5x5 array of Prysm LPDs. Together, these seven arrays make up the large 175 screen videowall with its total resolution of 11200x12000 pixels.

Another technical requirement for the videowall processor was compensating between the 1920x1080 input to the Prysm LPD processors and the 1600 active pixel width of each display cluster. Quantum Elite's output overlap feature, typically employed on edge-blended videowalls, proved to be the perfect solution. Adjusted to a 320 pixel, or six percent overlap setting, Quantum was able to map each output to the active resolution of each display cluster, resulting in a clean, seamless image.

The Right Solution

Quantum's clean-edge, artifact-free, source capture, precise image alignment controls, and predictable, real-time performance was critical for producing a single, continuous image for GE's Grid Explorer. The end result is a sprawling, animated landscape that is a simultaneously informative and visually stunning addition to GE's Global Innovation Center.



Quantum Elite 408 Videowall Processor

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UNITED STATES

+800.633.9876
Inside USA/Canada

EUROPE

+800.3987.6673
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ASIA

+800.7339.8766
Inside Asia

MIDDLE EAST

+971.4.299.1800