

CASE STUDY: COMCAST

Panasonic Display Highlights Comcast D.C. Flagship

Challenge

Conception and creation of ground-breaking, head-shaking, 'never-saw-anything-like-it' interactive virtual reality attractions for Comcast's statement-making flagship Xfinity Studio retail superstore in the heart of Washington D.C.'s ultra-prestigious Chinatown/Penn Quarter shopping district.

Solution

Assisted by Panasonic engineers in Newark, N.J., Osaka, Japan and onsite, immersive display building and installation specialists from Diversified hand-crafted a wraparound, VR video environment driven by Panasonic PT-RZ970 Solid Shine Laser projectors and Panasonic ultra-short throw ET-DLE030 and short-throw ET-DLE085 lenses.

Result

A rock-solid, low-maintenance attraction that meets or exceeds the "mathematically impossible" requirements laid down by Comcast. It has been up, running and surprising and delighting both non-tech oriented consumers and A/V junkies continuously, without a moment's down time, since the store's opening in early November 2017.

Any way you look at it; Comcast is a major enterprise. Number 36 on the U.S. and #96 on the Global Fortune 500, it encompasses an ultra-wide world of cable television, ISP, VOIP telephone, network television, feature film production, sports franchise and theme park enterprises. So when Comcast decided to open a new Washington D.C. retail location, making a statement about their technological prowess was a major priority from day one.

The moment he saw the design sketches for the 3D, fully immersive attraction at Comcast's new Washington D.C. Studio Infinity store, Scott Wiggins, an Associate Systems Engineer at Diversified, knew this job would be more than different, it would be unique: something he, and to his knowledge no one else, had ever attempted.

"They (Comcast and Cerami) came at us with this concept, this idea of creating a tall, 180-degree wrap-around screen with a very, very aggressive radius. The idea was to combine a 'you are there' video experience with a Kinect motion capture sensor and voice-recognition technology to virtually place the viewer into the onscreen action. In one scenario, the man or woman in the center of the viewing area could use the audio interface to call up different views of a Winter Olympics video clip. In another, he or she could match wits with the program via humorous quizzes."

Panasonic's impeccable level of support and cooperation exceeded "my already very high expectations."

– Matthew Ezold
Certified Technology Specialist,
Cerami & Associates

The possibilities for uniquely engaging the viewer with Comcast's services and content would, as the cliché goes, be endless-- but only if the finalized attraction lived up to Comcast's very high expectations.

"The problem was that the degree of immersion they wanted, as well as the space they had, dictated a half circle that would be too tight to project undistorted, HD videos on the screen regardless of how many projectors and what kinds of lenses you used," Wiggins explains. "I mean it wasn't just 'impossible' possible, it was physically impossible, mathematically impossible."

Fortunately for Wiggins and the endless stream of visitors to Comcast's latest flagship, Cerami & Associates Principal Matthew Ezold CTS-D (Certified Technology Specialist — Design) had already connected with Panasonic, well known for making impossible solutions possible throughout its global B2B Enterprise product line.

"When we initially approached the design we started with a dense pack of projectors that would be hard to install and difficult to maintain. We had initially thought to use the PT-RZ970 but even using Panasonic's calculators we couldn't make the radius work with a single projector," Matthew Ezold says. "We were about to abandon the concept and suggest pulling back on the immersion capabilities but decided to take one more try at making the design work and reached out to Panasonic to find out how far we could push the projectors. After several meetings with a team from Panasonic's U.S. headquarters in Newark we were confident enough to try for proof of concept by building a mockup."



Step 1 in the POC process was constructing the full-size replica in the middle of Diversified's Kenilworth, NJ, warehouse. Step 2 was the arrival of a projector design engineer from Panasonic's Osaka world headquarters. Step 3 came right out of the Thomas Edison handbook: "Genius is one percent inspiration and 99 percent perspiration."

"We spend hours upon hours upon more hours playing with calibration and mounting points," Wiggins says. "We knew that the 'trick,' the key to making the projectors do what the math said they couldn't do, was precise calibration. Not just rough or fine calibration, but meticulous trial-and-error calibration done in micro-inches."

After consulting with Panasonic optic specialists in Osaka, Wiggins and his onsite Panasonic collaborator determined that the single-chip Solid Shine Laser PT-RZ970 projector and ET-DLE085 short-throw lens were the optimal configuration for their highly specialized and demanding needs.

Aside from their ability to help make the "impossible" possible, major considerations in selecting the combo included the PT-RZ970's more than 10,000 lumens of brightness, Panasonic's proprietary Quartet Harmonizer technology for delivering an expanded color space and pure white balance from screen edge to screen edge and the ET-DLE085.



“When we were done we achieved exactly what Comcast wanted without any projector modifications, without using a custom anamorphic lens and without any trick computer software,” Wiggins says. “We used totally stock PT-RZ970 projectors and ultra-short-throw-ET-DLE085 lenses to achieve a picture perfect 180-degree curved screen that would be about nine feet long by 5.5 feet high if you flattened it out. The screen is mounted three feet off the ground and you can stand in the center while being three feet from screen’s surface and be totally immersed in the experience.”

The ultra-immersive curved-screen attraction is far from the only spellbinding element Panasonic and Diversified contributed to the Comcast showroom’s overall aura of fun and flash meets form and function.

There are also the overhead image-blended videos that gradually size down to create a forced, forward-leading perspective that helps, along with multiple eclectic LED “arrows” mounted on the ceiling, to subtly guide visitors further into the store.

“What we’re doing there is projecting a blended image from two PT-RZ970’s with ET-DLE030 ultra-short-throw lenses onto a six-foot long by five-foot high screen and a four-foot long by five-foot screen,” Wiggins says. “Each of the screens is framed by a trapezoid-shaped metal plate which creates the forward look illusion. The projected images



themselves are related to the content on a flat-screen display mounted on the wall and fronted by a short pillar holding a touchscreen.

“Technically, the big problem here was trying to prevent people from walking through the projection path, but the ET-DLE030’s almost unreal ability to cast large images despite being located nearly on top of the screen (ET-DLE030 throw ratio = 0.38 to 0.41:1) allowed us to ceiling mount the projectors very close to the wall and out of the normal pedestrian pathway.”

Like virtually all the Xfinity Studio’s electronic displays, the trapezoid projections and associated display screens are highly interactive. Beginning with an exterior view of a typical single-family home, visitors can use the touchscreen to explore many of Comcast’s myriad of entertainment, communications and home control options. They can, for example, take a virtual tour of the entire house viewing Comcast home “empowerments” room by room or they can choose to view more detailed demonstrations of a specific service, home security, for example.

Videos that beckon you forward with deliberate distortion, immersive content that thrusts you into the action, flashing arrows on the ceiling bidding you enter: Where are you? Is this a phone store, an amusement park, or is it something else altogether?

What it is really, says one senior Comcast retail marketing executive, is “simply, purely fun, immersive, innovative, uniquely differentiated in approach and execution and totally devoid of any ‘hard sell.’ [These immersive experiences] involve, they engage, they inform and they entertain. They’re just, like I said, fun.”

“The major requisite for a bespoke project of this complexity is a hardware manufacturer whose support you can depend on every step of the way from concept to completion,” Matthew Ezold concluded, adding that Panasonic’s impeccable level of support and cooperation exceeded “my already very high expectations.”