



V city Offers a Unique Shopping Experience Using Extron FOX Fiber Optics & XTP Systems

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Raymond Ng
Project Manager at Vega Global

V city in Hong Kong's New Territories West is the flagship shopping mall of Sun Hung Kai Properties. Built above the major transportation hub of Tuen Mun MTR and Light Rail Stations, the three-story 300,000 square foot (27,870 square meter) mall serves over 100,000 local and mainland China visitors daily. This fast-paced retail mecca operates from 10:00 in the morning until 10:00 at night every day of the year.

To provide a stable, reliable, and efficient digital signage and entertainment AV system that could support direct HDMI input as well as the required transmission distances within V city, the integrator, Vega Global, installed Extron XTP Systems® and FOX Series fiber optic extenders. “For this new shopping complex, the client placed system reliability and product quality at the highest level; therefore, we installed XTP and fiber products from Extron,” says Raymond Ng, Project Manager at Vega Global.

AV Needs and Design Challenges

Digital signage provides merchant brand imaging, in-store promotions, upcoming mall events, and details about the shopping complex. The AV system is also used to broadcast live mall productions, such as celebrity and media functions, mini concerts, and festival celebrations. Events are held on a centrally located stage with a stunning large screen presentation and lighting system.

The hybrid AV design, with an XTP System at the heart and fiber optic extenders for the longer distances, supports stage activities and delivers content to 55 strategically located flat panel displays.



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Extron FOX Series fiber optic transmitters and scaling receivers deliver HDMI content to strategically mounted, flat panel displays.

Displays ranging in size from 42" to 65" are mounted horizontally or vertically, depending on usage. Two destinations include 1x3 video walls, which allow merchant advertising and promotions to be featured for shoppers riding the escalators between floors. Ten of the displays also function as touchscreens to enable reservation booking for any V city restaurant. This unique functionality allows visitors to continue to shop while waiting for a table.

The installation required support of a vast array of both local and remote source devices. Rack-mounted sources with HDMI output include NETPRACTICE® player servers with full HD video capture, Sony® BDP-S380 Blu-ray Disc players, Cable TV set top boxes, Magic TV™ MTV3200S tuners, as well as a Medialon HD video player with Portal TV playback capabilities. A selection of Windows®-based and Apple® computers also offer content. To enable image capture at remote locations such as the V city stage, Panasonic AWHE-60 cameras with SDI output were discreetly mounted close to ceilings. SDI signals are converted to DVI for simplified switching and distribution throughout the complex.

Another technical challenge was temperature management in the master control room. The AV equipment is mounted in ten 42U racks that are arranged against the walls of the 300 square foot (28 square meter) enclosed room. Twenty computers that support the Medialon workstations also share the limited space. The end result of having all of this active equipment in such a confined space was excessive heat.

The high profile nature of this installation meant that AV system failure would tarnish the reputation of V city and have a direct financial impact on its stores and restaurants. The recommendation was to have the general contractor augment the room's ventilation system and select AV equipment that provided exceptional thermal management. Vega Global contacted Extron for assistance in designing a high performance solution that was both reliable and efficient.

XTP Systems and FOX Series Products Provide Stability, Reliability, and Efficiency

To provide AV signal switching and distribution from the second floor control room, the system includes three Extron XTP CrossPoint®

matrix switchers and a selection of FOX Series fiber optic extenders. Two XTP CrossPoint 3200 frames and an XTP CrossPoint 1600 are populated with four-port XTP CP HDMI input and output boards for local routing. This configuration enabled direct connection between the wide variety of local sources and the matrix switchers, eliminating the need for additional extenders and conserving valuable rack space. According to the integrator, the XTP® models were selected for the line's proven stability and included technologies. The modular, hot-swappable design of the matrix switchers plus redundant power supplies ensure continuous system operation, and the high-speed digital backplane that is standard on both XTP CrossPoint models maintains signal integrity for the highest resolutions. SpeedSwitch® Technology and Key Minder® provide high performance switching and reliable distribution of HDCP-encrypted content.

A total of 64 modular FOX Series fiber optic transmitters installed in eight Extron PowerCage 1600 enclosures and ten FOXBOX Tx HDMI MM transmitters enable extension of HDMI signals to displays located throughout the three-story mall. To ensure the best image resolution, a FOXBOX SR HDMI MM scaling receiver is mounted to the back of each flat panel display.

According to Vega Global, the PowerCage® enclosures have proven to be a very efficient way to power and mount fiber optic transmitters in the close quarters of the master control room. Air flows from the side of the enclosure to each board slot, eliminating the need for an air gap above or below the unit and preserving valuable rack space. PowerCage boards are designed to channel air out the rear of the enclosure for optimal cooling and system reliability. LED indicators on the front panel provide instant feedback for power status, communication, and alarm for each board slot as well as real-time status alert of an over-temperature condition for the entire enclosure. "Only Extron's combined FOX and XTP solution could support the 150-meter transmission requirements and also work within the limited space and challenging environment of the control room," says Ng.

To allow table booking at any restaurant, the V city reservations system uses ten USB players tied to touchscreen displays located throughout the mall. Extron fiber optic extenders enable communication between



Three XTP CrossPoint matrix switchers and a variety of FOX Series fiber optic extenders from Extron provide AV signal switching and distribution throughout the shopping complex.

the touchscreens and the USB players. FOX USB Extender Tx MM transmitters are rack-mounted with the players, and the low-profile receivers are mounted discreetly behind the touchscreens. This design eliminated the need for additional AV equipment or IP network drops, saving install time and reducing costs.

Results

From the beginning of the project, the V city representatives made it clear that the installation had to provide high performance switching and long haul delivery of HD content as well as being efficient. Also, it needed to be extremely stable, continually serving mall visitors and supporting important events held on the stage. Vega Global worked closely with Extron to design and install a solution that took advantage of the best features of both twisted pair and fiber optic technologies, which also simplified the design. Integration of the XTP System allowed

direct AV signal input and output from the matrix switchers, reducing the number of extenders within the control room and to local endpoints, while the FOX Series transmitters and receivers provided high quality signal extension to remote mall destinations. The digital signage and entertainment AV system has been running smoothly since V city opened in August, 2013.

“As one of the premiere AV systems integrators in APAC, Vega is committed to providing only the best products and services to our clients so for V city it had to be Extron’s XTP and fiber products,” says Raymond Ng, Project Manager at Vega Global. “We highly recommend our clients use Extron, a brand we trust.”

Partial List of Extron Products

- XTP CrossPoint 3200 Modular Digital Matrix Switcher
- XTP CrossPoint 1600 Modular Digital Matrix Switcher
- PowerCage 1600 Modular Power Enclosure for Fiber Optic Extenders
- PowerCage FOX Tx HDMI MM Fiber Optic Transmitter for HDMI, Audio, and RS-232
- FOXBOX Tx HDMI MM Fiber Optic Transmitter for HDMI, Audio, and RS-232
- FOXBOX Rx HDMI MM Fiber Optic Receiver for HDMI, Audio, and RS-232
- FOXBOX SR HDMI MM Fiber Optic Scaling Receiver for HDMI, Audio, and RS-232
- FOX USB Extender Fiber Optic Extender for USB Peripherals



PowerCage 1600
Modular Power Enclosure for Fiber Optic Extenders

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