Extron XTP, Streaming, and Control Systems Empower Point Park University's Varsity Esports Program

"Extron worked with us to build out an exceptional facility to service our esports program for its inaugural year. The installation was seamless, and the system assists with coaching as well as showing off the space to new recruits. I could not be happier with the project results."

Chris Gaul
Esports Director and Head Coach at Point Park University

Challenges

Point Park University in Pittsburgh, PA, wanted to enrich their athletics program with an exciting foray into esports. After successfully hosting a competition off campus, they hoped to have a varsity team ready to compete in the National Association of Collegiate Esports Rocket League Fall Season and League of Legends. In addition to competitive gaming, students enrolled in the program would work with the coach and support staff to learn about the back-of-house processes and supporting technologies. These would include AV streaming, casting, event planning and execution, graphic design, and videography.

The university brought in RPC Video, Inc. to design and install a high performance AV system for the new esports training facility. To provide the kind of system performance necessary for a seamless competitive gaming experience, the design team chose Extron XTP Systems®, along with the SMP 111 streaming media processor and Pro Series control products.

The esports training room includes 16 high-powered gaming stations with 27" HDR gaming monitors. Signals from any gaming station can be routed to the wall-mounted large screen displays and the SMP 111 streaming media processor.

The coach can send game play to the wall-mounted displays for instruction, encouragement, or to celebrate a victory. Matches can also be captured and live streamed to Twitch, YouTube, or similar platforms.

The DSC HD-HD 4K PLUS A mounted behind each wall display scales the 2560x1440 signal from the gaming PC to the display's native resolution. The scaler for the center display also de-embeds audio to support the sound system.

XTP at Core of Esports Training and Competition

To start the project, Point Park University's Physical Plant remodeled an under-utilized aerobics studio on the second floor of the Student Center. The Media Services and IT departments worked together to deploy a new high-speed data network and incorporate multimedia lines within the 1,450-square foot room. Then, they teamed with RPC Video to design an AV system capable of meeting the extreme demands of esports.

Source signals originate at 16 gaming stations, each with a custom, Intel® Core i7 10700K 8C/16T 5.1 GHz computer and a 144 Hz Asus® ROG Strix XG279Q 27" HDR gaming monitor. Coaches, team members, and local spectators can observe the action taking place at any gaming station on 70" and 86" displays, which are mounted to the left, right, and center walls. Additional displays include 24" monitors at the instructor station and within the adjacent equipment room that houses the AV switching system.

Switching hardware with the highest available performance was required for the signal path. An Extron XTP II CrossPoint 3200 modular matrix switcher with a 50 Gbps digital backplane provides instantaneous switching among the gaming station feeds. It is configured as 20x20, with XTP II CP HD 4K PLUS I/O Boards supporting uncompressed HDMI video resolutions up to 4K/60 4:4:4 at data rates up to 18 Gbps. The system also complies with HDCP 2.3 for the content-protected games. A redundant power supply ensures continuous game play, which is critical during matches. The matrix switcher also fit easily into the equipment room rack, allowing maximum floor space within the game-play room.

Extron for AV Signal Extension, Scaling, and Streaming

Extron HD Pro Plenum Series hybrid fiber-copper cables carry AV signals between each gaming station and the matrix switcher, delivering HDMI signals up to 300 feet. The cable's built-in active circuitry is powered by the connected gaming station computer. The HD Pro Plenum cables are an ideal choice for this application since they can send HDMI signals long distances with pristine quality without any compression or latency. They support a wide range of HDMI resolutions, refresh rates, and HDR. Also, the flexibility and narrow bend radius of this plenum-rated cable made it easy to install. Integration of HD Pro Plenum cabling reduced overall system complexity and cost.

To scale high frame rate, 2560x1440 signals from the gaming workstations to the 3840x2160 native resolution of the large displays, an Extron DSC HD-HD 4K PLUS A is mounted to the back of each display. When no signal is present, the scaler's screensaver is configured to show school branding content. The scaler supporting the center display also de-embeds audio coming in from the XTP II CrossPoint® matrix switcher, enabling audio extraction for the external sound reinforcement system.

Coach Gaul controls the XTP system using the TLP Pro 1025T 10" Tabletop TouchLink® Pro Touchpanel at his workstation.

The XTP II CrossPoint 3200 matrix switcher and other system components are rack-mounted in the adjacent equipment room. This space is also used to store spare gaming gear and provides a small work space with a connected monitor.

An Extron SMP 111 high-performance recording and streaming media processor captures and distributes the game play for selectable live streaming to Twitch, YouTube, or similar platforms.

Extron Pro Series Provides Full System Control

The coach uses a TLP Pro 1025T TouchLink® Pro touchpanel installed at the instructor station to control a variety of AV system operations. The touchpanel works in concert with two rack-mounted IP Link Pro control processors to manage all of the major components in the system. Three AV LAN ports on the Extron IPCP Pro 360 processor allow control of the AV equipment and safeguards them from outside intrusion or interference. The IPL Pro S3 processor enables control of the observation displays over the university network. The processors also provide application controls, such as AV system and device power, audio level adjustment, and streaming/recording controls.

RPC Video and an Extron system design engineer worked together on site to commission the XTP system in time for the team's first training session.

Results

While not as well known or understood as most professional sports, esports is an international sensation with millions of collegiate and general population fans as well as corporate sponsorship. This industry earns an annual revenue in excess of $1 billion.

Point Park University saw the interest and potential for its students. Their new esports facility not only allows the varsity team to compete, it enables each enrolled student to explore the business side of esports and to gain valuable hands-on experience with the back-of-house technologies.

"Esports applications are right in Extron's wheelhouse," says Steve Obenreder, Sales Manager at RPC Video, Inc. "Point Park has a strong preference for Extron solutions because of their reliability and feature sets at reasonable price points, and our experience with Extron products leads us on that same path."

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