



CASE STUDY

Extron AV Equips Army West Point Esports Teams to Compete and Win

Extron

Five player positions in the Live tournament area.

All photos and Army West Point Esports Introduction video courtesy of United States Military Academy West Point

The rAve Esports Show with Bubba Gaeddert video courtesy of THE rAve Agency



Three projection screens show gameplay action and related video content in the Immersive Display Area. A mobile whiteboard displays video from a ceiling mounted projector that points down. During strategy and coaching sessions, dry erase markers are used to annotate the projected images on the whiteboard.

“The competitive edge gained with Extron AV takes Army West Point Esports to the next level of collegiate esports. That alone is a powerful statement, as the world of collegiate esports is on the rise and poised to be a dynamic foundation for the future of esports in all forms: recreational, collegiate, and professional.”

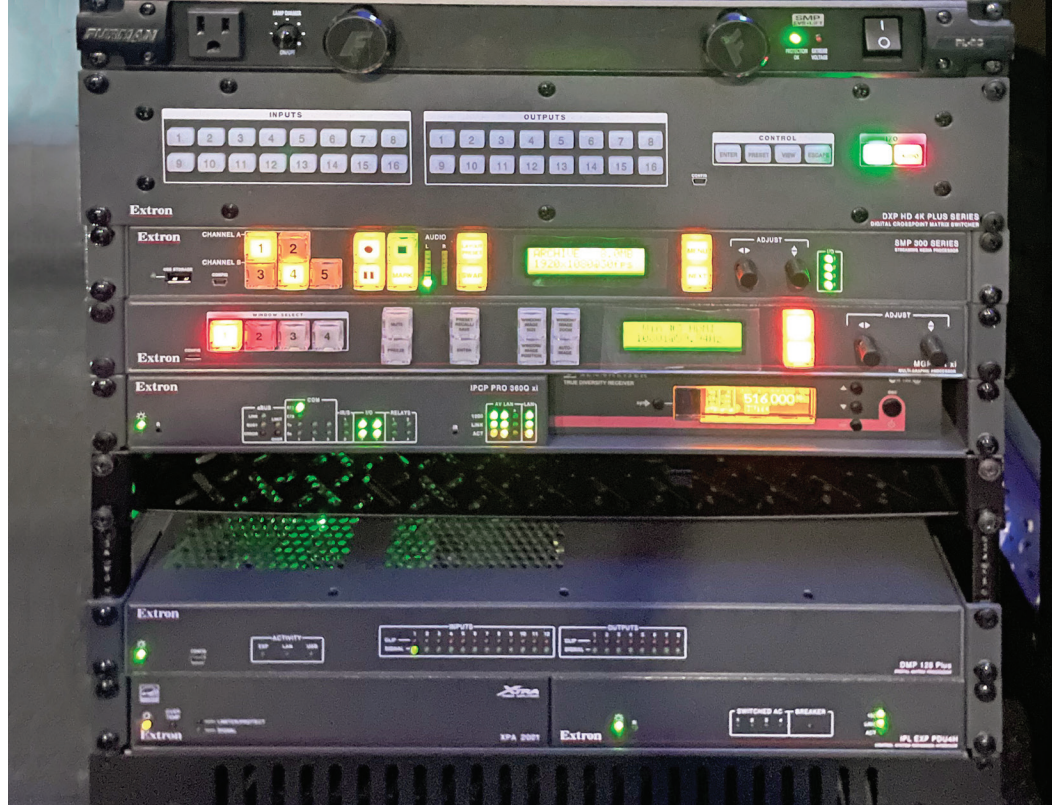
Victor Castro
Director Army West Point Esports
U.S. Military Academy West Point

The U.S. Military Academy at West Point's mission is, “To build, educate, train, and inspire the Corps of Cadets to be commissioned leaders of character committed to the Army Values and ready for a lifetime of service to the Army and Nation.” In support of that mission, the Army West Point Esports program was established to provide cadets with competitive experiences, teaching them to be skilled tacticians, create the confidence to make correct decisions under pressure, foster teamwork, instill a winning spirit, a drive for excellence, and tenacity to prosecute the mission to ultimately win. Today, about seventy-five cadets participate in seven esports teams, competing in Overwatch®, Rainbow Six Siege®, and Rocket League® in the Eastern Collegiate Athletic Conference, Call of Duty® in the College Call of Duty League, Valorant® and League of Legends® in the College League of Legends, and Apex Legends® in the Octane League. These teams are based in an esports facility that is part of the CAVE (Computer Assisted Virtual Environment), constructed to support the West Point [Simulation Center](#).

DESIGN SOLUTION

At the Army West Point Esports facility, Extron AV signal processing, switching, distribution, control, and audio components enable seamless integration of all gameplay video and audio sources into a versatile centralized hub, providing a variety of options for ultra-low latency distribution throughout the facility, as well as streaming over the internet to gaming platforms such as Twitch.

Esports facility AV equipment rack is located under the Production Booth table.



“The United States Military Academy strives to provide superior learning experiences for cadets as they develop into leaders of character who qualify to become Army Second Lieutenants.”

“Seventy-five cadets participated in the design and construction of the esports facility AV upgrade. Collaborating with Extron on the project immersed them in a technologically advanced training environment. The hands-on experience gave them a deeper understanding of the hardware and software that makes esports possible, empowering their passion for competitive gaming.”

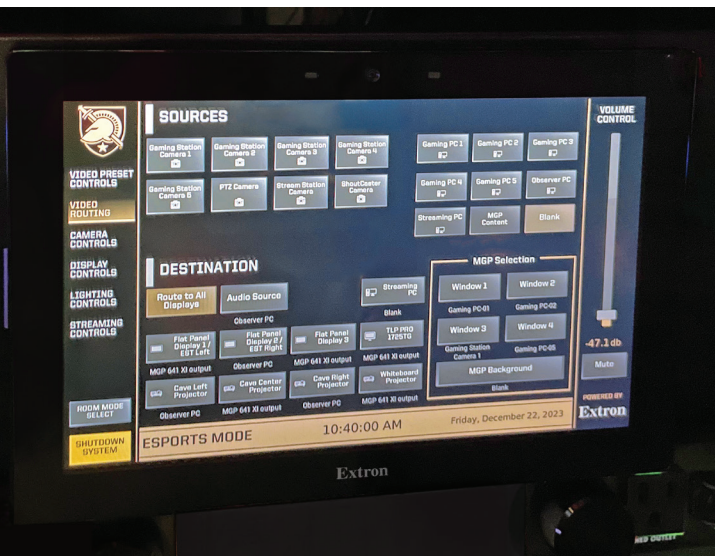
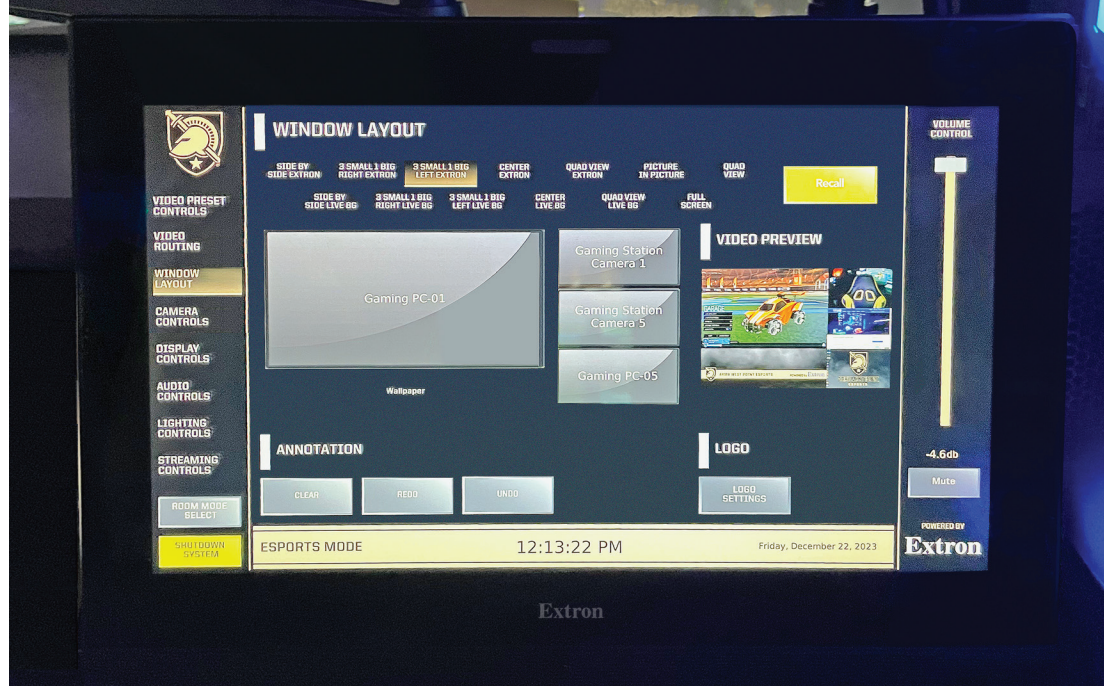
Victor Castro
U.S. Military Academy West Point

Members of the Army West Point Esports teams gain valuable technical knowledge and skills by working side-by-side with AV and IT experts from several industry partners (including Extron) during design, installation, and commissioning of the esports facility computers, network, and AV infrastructure. Unlike many esports enthusiasts, West Point’s players not only know how to win games; they know - down to the component and cable level - how their gaming facility is built and how it operates. That deep knowledge gives them a competitive advantage when going up against teams from other schools.

Production Booth Central AV Rack – Plenty of Power Under the Hood

Switching and Streaming. Central components of the esports AV system are housed in a rack that fits under the Production Booth desk. A 16x16 DXP PLUS 4K/60 matrix switcher routes AV sources to various destinations which include the room’s many displays, as well as an MGP 641 xi multi-window processor and an SMP 352 dual recording streaming media processor. The MGP unit enables display of up to four source windows on a single screen, with a live or static background and live annotation. This gives the production crew a myriad of choices for leveling up the production values of the content shown to local and online audiences. The SMP unit simultaneously streams video and audio from up to two sources to the Internet for viewing on Twitch and other gaming platforms. The streamed content from both sources can be simultaneously recorded to internal or external storage.

Intuitive TouchLink Pro touchpanel GUIs allow the Technical Director and other users to make quick AV content routing selections, windowing choices, and adjust other AV system parameters.



The Simulation Center, co-located in the CAVE within the esports facility, has its own separate equipment rack. A second 16x16 DXP matrix switcher housed in this rack performs AV signal routing functions for the simulation system.

Powerful Sound. Sound in the esports venue is provided by six SM 26T surface mount speakers driven by a 200-watt XPA® 2001 amplifier. Game audio, as well as shoutcaster play-by-play commentary and Technical Director announcements are mixed and processed by a DMP 128 Plus audio DSP processor that feeds the XPA amplifier and a powered subwoofer for in-room listeners, as well as the SMP for streaming audio content to the Internet. Audio is also available from wired and wireless mics in the room.

AV System Control. An IPCP Pro 360Q xi control processor allows a variety of preset modes to be set up for the AV system, and provides a user interface to route AV content sources to any of the many displays. It also controls room lighting via an IPL EXP PDU4H power expansion interface. A 17" TouchLink® Pro touchpanel on the desk in the Production Booth is the main AV system operator interface and is typically the domain of the Technical Director during competition game days. Two 10" TouchLink Pro touchpanels are part of the room's Simulation System functions. They serve as auxiliary user interfaces for esports AV control, as well as setting up AV content for the Simulation System. Wireless control from anywhere in the room is provided by the Extron Control app, which places the TouchLink Pro AV control interface on a roving tablet.



Shoutcaster is on-camera while calling play-by-play gaming action from the production booth during a tournament.



Tournament gaming station POV camera above the display captures the player's face, visible in lower left window of the projected display in the background.

A Room Full of AV Sources: Gaming Stations, Production Booth, PTZ Camera, and More

Practice and Tournament Gaming Stations. The esports venue has 50 practice gaming stations and five stations in the live tournament area. All gaming stations are connected to a dedicated Ethernet gaming VLAN. The five tournament stations provide gameplay content to the AV system via HD Pro Plenum Series HDMI cables for distribution to the room displays and for streaming over Army West Point's [Twitch® gaming channel](#). During competitions, this Twitch channel has logged up to 2.3 million views with over 18,000 people watching.

Each tournament station includes a high-performance gaming PC with a gaming keyboard, mouse, and Dolby® Surround Sound headset with boom mic. The PCs are connected via DisplayPort to high-refresh-rate, widescreen gaming monitors. For inter-player audio chat communication, each station includes a professional gaming mixamp with manual and software controls, allowing game-to-voice balance and equalization to be optimized for different game genres.

Cameras Galore. There are eight cameras to capture video action from every perspective. Each of the five tournament gaming stations contains a POV (point-of-view) camera above the monitor to capture player reactions. There are two more POV cameras at the production booth and the streaming station to capture video of shoutcaster gestures as they announce their rapid-fire play-by-play commentary. A PTZ camera operated from the production booth takes in the entire room. All cameras send 1080p video to the AV system via HD Pro Plenum Series HDMI cables.

Audience Viewing Gallery has gaming action on two projection screens.



Three observer displays are located around the gaming floor. One of them is visible in this photo.

“The Academy leadership recognizes that esports is a valuable tool for cadets. And the ultimate goal is to become one of the top collegiate esports programs in the nation - and to win with honor.”

Closing message of video: "Introducing - Army West Point Esports"
U.S. Military Academy West Point

Displays: Projection Screens and Monitors Wherever You Look

Wherever you are in this esports venue, you're in the middle of the gaming action; there are displays everywhere!

Immersive Display Area. This area has three projection screens arranged in a trapezoid. A mobile whiteboard provides a fourth projection screen that supports annotation of game play action. All four screens are illuminated by laser projectors suspended from the ceiling. The projectors receive HDMI video from the DXP matrix switchers in the AV system, allowing them to display audiovisual content from any source in the room. And the AV system's MGP multi-window processor allows any designated screen to show up to four video source windows with live or static backgrounds.

Audience Viewing Gallery. Consisting of two laser projectors beaming video images onto two large screens, the gallery can accommodate a sizeable viewing audience. Like the Immersive Display Area, the switching and windowing capabilities of the AV system provide total flexibility to show audiovisual content from any source in the room.

Observer Displays: For those walking around the gaming floor, three 55-inch displays are strategically mounted on the walls throughout the area, allowing visitors to easily glance up and view the action. Like all the other audience displays, these are fed by HDMI from the AV system matrix switchers and can show any available audiovisual content.

The Army West Point Esports introduction video provides an inside look to the creation of the United States Military Academy's premiere competitive Esports program. Click the image or [here](#) to play the video.



THE rAve Esports Show features a walkthrough of the West Point Esports arena, highlighting the audiovisual technologies that deliver exceptional experiences for players and audiences. Click on the image or click [here](#).

RESULTS

Army West Point Esports is a cadet-led competitive program offering experiences in small-unit team management, communications, strategy, and critical thinking. Players build resilience and a strong winning spirit. By participating in hands-on projects like integrating the Extron AV systems into the esports venue, cadets learn what goes into doing the job right. As they progress in their military careers, they will become sought-after problem solvers.

Cadet esports players and production team personnel acquire real world experience through the esports program, learning the role of professional AV and how well-implemented AV design can pay off. This knowledge and experience can be transferred to the highest levels of command cells and training facilities, such as Mission Training Centers.

“The Extron AV system boosts production values by allowing us to route every source to every destination in any combination, easily managed from TouchLink touchpanels or a wireless tablet. Players and production team members now have real-world applications for dynamic audio and video production systems. Gaining experience on these systems arms cadets with knowledge on how to apply the technology in mission planning and briefing environments.”

Victor Castro
U.S. Military Academy West Point

FEATURED EXTRON PRODUCTS

Model	Description
DXP 1616 HD 4K PLUS	16x16 4K/60 HDMI Matrix Switcher with Audio De-Embedding
SMP 352 - 80 GB SSD	Dual Recording H.264 Streaming Media Processor - 80 GB SSD
MGP 641 xi	4K/60 HDMI Multi-Window Processor with DTP3 Extension
MGP 641 xi Annotation LinkLicense®	Upgrade MGP 641 xi Multi-Window Processor for Annotation Capabilities
DMP 128 Plus	12x8 ProDSP Audio DSP Processor
XPA 2001	Mono 70/100 V Amplifier - 200 Watts
SM 26T	SpeedMount® Two-Way Surface Mount Speakers with 6.5" Woofer
IPCP Pro 360Q xi	IPCP Pro xi Quad Core Control Processor
IPL EXP PDU4H	Control System Power Expansion Interface
TLP Pro 1025M	10" Wall Mount TouchLink Pro Touchpanel
TLP Pro 1725TG	17" Tabletop TouchLink Pro Touchpanel
Extron Control App	Control App for TouchLink, eBUS, Network Button Panels, and MediaLink
HD Pro Plenum Series	HDMI Premium High Speed Optical Cables - Plenum

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