



Boardroom Gets Major Refresh with Extron XTP System and DMP 128 Audio Processor

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Jose Bejar
IT/AV Support for Los Angeles World Airports

Los Angeles International Airport, LAX, is known to be among the ten busiest airports in the world. Recently, Los Angeles World Airports, or LAWA, the city department that owns and manages LAX, found that the aging AV system in their Samuel Greenberg Boardroom, which features a 100-seat gallery, was in need of a major refresh. The existing system was incapable of providing the presentation quality and flexibility required by airport management, vendors, and guests. The LAWA Board of Commissioners authorized the design and installation of a new system with superior video and audio capabilities. Their tech team selected Extron's XTP Systems® for high performance signal routing, DMP 128 signal processors for exceptional sound, and TouchLink® touchpanels for system control.

“We picked Extron because we already knew they made top quality products with the capabilities and flexibility we needed,” says Jose Bejar, IT/AV Support for Los Angeles World Airports. “They also had outstanding support, which made system commissioning much easier for us.”

Background

Erected in 1961 to serve as the LAX control tower, the 12-story Clifton A. Moore Administration building now serves as LAWA headquarters. The building was remodeled in 1996 when the new control tower went into service. As with most of the meeting rooms, the boardroom originally included a basic analog AV switching system. Over the years, the AV system received patch updates only when budgets allowed. A long succession of department reassignments and revolving door in-house support further complicated system maintenance. The result was a myriad of design work-arounds,



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The mezzanine-style control room offers complete AV system operation and a clear view of displayed content within LAX's 100-seat Samuel Greenberg Boardroom.

mismatched equipment, and cable runs that were intertwined with no organization. LAWA was granted a limited budget for the design and installation of the boardroom's new AV system. The solution was to select reliable, high performance products that were easy to integrate and maintain as well as operator by in-house staff and invited guests. The LAWA team contacted Extron for design assistance.

Extron Selected for AV Subsystems XTP System for High Performance Routing

The previous AV system used a distribution amplifier to send the same content to the room's three displays. As presentations became more sophisticated, the need to display unique content on the different screens became a requirement. Extron's XTP System was selected because of its modularity and ability to support local and remote devices within the facility.

"Before, when a presenter asked if they could show slides on the center projector, have diagrams or blue prints on one of the side displays, and cue up a video clip to run on the other, the answer was no," says Bejar. "With Extron's XTP System, sending different types of content to any combination of displays is quick and easy."

The XTP System provides signal routing from the various source devices to the room's ceiling-mounted projector and two 65" flat panel displays, which are mounted to the left and right of the projection screen. AV signals are also sent to an HP wall monitor in the back control room. Rack-mounted sources include four Sony Vaio laptops,

an HP computer, Blu-ray™ player, Motorola cable TV receiver, Apple TV, along with a mix of VOIP, AV streaming, and digital recording systems. Another computer and Blu-ray player are installed within the lectern.

Extron Cable Cubby 600 enclosures installed in the lectern and at both ends of the head table offer HDMI, VGA, Audio, and LAN connectivity and power for portable devices. Table locations are equipped with Extron Retractors for added convenience and improved cable management. According to Bejar, the Board has expressed great appreciation for the increased flexibility and ease of use. This upgrade provides simplified connectivity for users while maintaining a professional look in the room by eliminating the need for individual cable runs to support various meeting requirements.

From within the lectern, two Extron XTP T USW 103 three-input transmitters provide source selection of local equipment and connected portable devices. These products feature Automatic Input Switching, which is used to streamline room setup for unknown presentation needs. When multiple sources are used during a session, each XTP T USW 103 is pre-configured for prioritized switching, enabling input selection prior to transmission to the matrix switcher. An Extron Annotator and XTP SR HDMI scaling receiver are also located within the lectern. Connected to an ELO 2201L 22" touch screen monitor, the Annotator is used to emphasize key points and share concepts during brain-storming sessions. The XTP receiver scales source images for optimal display on the touch screen. "Everyone was very excited about the interactivity possible with the Annotator," says Bejar.

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Cable Cubby 600 enclosures installed in the lectern and at both ends of the head table offer HDMI, VGA, Audio, and LAN connectivity plus power for portable devices.

The Extron XTP CrossPoint 1600 matrix switcher is populated with I/O boards in a 12x12 configuration for local and remote signal distribution. HDMI signals from multiple rack-mounted devices are connected directly to the XTP CrossPoint®, and XTP HDMI extenders provide signal delivery over twisted pair cabling to remote locations.

The installation team downloaded the XTP System Configuration Software and put it to use for setup and commissioning. Bejar commented that he was impressed with its EDID and HDCP management capabilities as well as how the software streamlined system integration. The control room staff now uses the software to remotely monitor and operate the XTP CrossPoint matrix switcher and the endpoints.

DMP 128 Ensures Exceptional Sound

Audio for the LAX AV system upgrade provided its own set of challenges for the integration team. System requirements included sound reinforcement for the 100-seat gallery area, voice capture, mixing and routing of audio signals from video sources, and an audio feed for local cable TV broadcasts of the proceedings.

At the center of the extensive sound system are four Dante™-enabled DMP 128 Series digital matrix processors from Extron. These processors support various audio tasks and signal routing, including audio conferencing with acoustic echo cancellation — AEC, 30 wired and wireless microphone feeds, distribution to amplifiers feeding 12 overhead speakers, an audio recording subsystem, and a VOIP system



Two XTP T USW 103 switchers and the Annotator offer local or connected source selection and presentation enhancement from the front of the room.

feed. To enable communication with the central office and support the conference bridge, land lines are connected to the Line and Phone ports on one of the DMP 128 processors.

The 12x8 audio matrix mixer provides application-specific features designed for scenarios like the LAX hybrid boardroom/government council chamber. These include Extron ProDSP™ 32/64-bit floating



The Extron DMP 128 processor's features, such as acoustic echo cancellation and Dante audio networking, have proven invaluable to the LAWA Board.

point signal processing for outstanding audio quality; automixing with multiple mic groups to tackle the large number of live microphones; eight channels of acoustic echo cancellation for effective remote conversations between multiple locations; POTS analog phone interfacing; and Dante™ audio networking.

Dante is utilized in the Samuel Greenberg boardroom to provide high performance digital audio distribution over the local area network. One DMP 128 C P AT is the master audio digital signal processor to take advantage of its POTS connection as previously noted. Three additional DMP 128 C AT units provide input and output channel expansion. The built-in four-port Gigabit switch provides direct interconnection between all four units whereby a single Ethernet cable from each subordinate unit to the master processor replaces multiple cable runs and reduces integration costs. This was an important factor given the upgrade time and space-constraints.

Simplified DSP Facilitation with DSP Configurator Software

User-friendly Extron DSP Configurator software facilitates audio DSP management of the DMP 128 processors and allows the control room staff to easily route signals, manage gain structure, and optimize signals for live reinforcement as well as the feeds for archival audio and broadcast. The fixed but flexible graphical user environment of DSP Configurator simplifies the normally complex assignment of expansion routing, automatic mixing, and AEC. Two additional benefits of the software include visualization of the processing blocks and routing plus a Live Mode, enabling connection to all four processors

via RS-232, USB, or Ethernet to immediately hear any changes made to the system in real time.

"With the DMP 128 processor, we're able to mix, route, apply AEC, and network the audio for the boardroom as well as use POTS to support our conference bridge," says Bejar.

Extron Speakers and Amplifiers Complete the Audio System

During a visit to Extron world headquarters in Anaheim, California, Mr. Bejar had the opportunity to audition the Extron SM 26T SpeedMount speakers. To ensure complete coverage, six of these speakers are positioned in the center of the room, facing the audience in a staggered pattern. Incorporating these two-way surface mount 70 volt speakers offered an immediate performance upgrade, providing the needed gain for gallery area sound reinforcement. The optional yoke mount kit simplified installation for the LAWA team. Integration of SM 26T speakers allowed full realization of the newly added audio processing gear.



DMP 128 C P AT

12x8 ProDSP Proc. w/ AEC, POTS and Dante

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TouchLink touchpanels enable AV system operation and monitoring from the lectern and the control room.

To drive these speakers, XPA 2002-70V two-channel 70 volt amplifiers from Extron were selected. At 200 watts per channel, these 1U amplifiers not only provided ample power but recovered critical rack space as two Extron amplifiers fit into the space previously needed for just one of the original amplifiers. In addition, these ENERGY STAR-qualified amplifiers conserve energy costs with a stand-by mode, where the amp draws less than one watt, versus the always-on power draw of the previous amplifier. The Extron speakers and amplifiers completed the audio system. "The Extron speakers and amps provided a night-and-day difference in sound quality over what we had before," says Bejar.

Touch Screen Control of Presentation

LAWA elected to keep the boardroom's AV system separate from the IT network, although the project remained under the jurisdiction of the airport's IT department. The intent of the separation was to prevent possible presentation disruptions from managed network updates or unscheduled service restrictions.

To control presentation from within the boardroom, an Extron TLP 1000MV 10" Wall Mount TouchLink® Touchpanel is embedded in the lectern next the ELO touch screen monitor. Touch devices were selected to simplify AV system operation for invited guests and LAWA

employees unfamiliar with presenting in the board room. The TouchLink touchpanel provides easy system control from the front of the room. To conserve outlet usage at the lectern, it is powered over Ethernet.

The TLP 1000MV works in conjunction with an Extron IPCP 505 IP Link® Control Processor to enable in-room control of the various source devices and displays. Utilizing the existing network infrastructure, the IPCP 505 also communicates with another 10" TouchLink touchpanel located in the control room. This tabletop model allows remote system operation and monitoring.

Results

The allotted time for AV system installation and commissioning was two months, and the integration team only had access to the space in and around scheduled meetings and ad hoc events. Extron engineers helped guide system installation by phone and with onsite visits. These actions continued after commissioning, reducing the AV system operation and maintenance learning curve for the LAWA team.

The AV system has been operating trouble-free since September 2013. Board members, staff, and visitors alike have remarked on the simplicity of displaying various types of content on the three screens. The sound system, built around the DMP 128 processors, has also received much praise. Discussions are clearly audible from the back row seats, and recorded sessions offer the crisp images and clear sound that are vital for archival purposes. The LAWA Board of Commissioners is very pleased with their new high performance AV system.



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