



## Fortune 500 Company Uses Extron Products in Complete Technology Overhaul

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**Martin Waverley**  
President  
AVDB Group

Avnet is one of the largest distributors of electronic components, computer products, and embedded technology, providing a vital link in the worldwide technology supply chain. The company has annual revenues in excess of \$25 billion, and for the last five years it topped Fortune magazine's list of the World's Most Admired Companies for Technology Distribution.

When it was time to upgrade the AV systems at the corporate headquarters in Phoenix, Arizona, Avnet turned to AVDB Group. The decision was based on the mutual trust and respect built with Martin Waverley, President of AVDB Group, who has assisted Avnet with in-house technologies since the early 1990s. He also assisted with designing the company's Technology Museum, which opened in 2005, and he continues to be instrumental in searching out historic pieces for the collection. For his longtime client, Waverley selected a full gamut of AV signal switching, distribution, and control products from Extron. “The decision to standardize on Extron is due to a number of factors, not least of which is our long experience with the reliability of the products and Extron's outstanding customer service,” says Waverley.

### HQ Technology Refresh

Early in 2013, the plans for the headquarters' AV upgrade were approved. AVDB immediately began coordinating efforts with the general contractor and the other trades brought in to perform architectural and cosmetic changes to the building. AVDB also worked closely with Avnet's Planning and Development experts, Michelle Anderson and Lori Fuelberth, to select furnishings and equipment that were designed with AV needs in mind.



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INTERFACING, SWITCHING AND CONTROL

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A TouchLink touchpanel is used to select inputs for presentations during company events and all-hands meetings in the café.

The first stage of the AV system upgrade involved replacing the original coaxial cable infrastructure with plenum-rated AV twisted pair cable from Extron. According to the integrator, the selection was based on the performance capabilities and high quality of this cable. To avoid disrupting business, the general contractor spent nights and weekends coring floors, sinking new floor boxes, and running cable. The plenum-rated cable is run through air-return spaces where possible, limiting the need for conduit. This option streamlined installation and reduced labor costs. The new infrastructure also provides an upgrade path for endpoint devices.

### Common In-room Resources

Named after cities in Arizona, all of the meeting rooms have network connectivity and include high resolution display devices, digital and analog AV sources, connectivity for portable equipment, signal extenders, a sound system, an IP Link® control processor, and at least one wall-mounted TouchLink® touchpanel, as well as the appropriate mix of Extron accessories and pre-terminated cables. To maximize available space in most rooms, AV racks were replaced with plenum-rated ceiling boxes and back boxes were installed behind the flat panel displays.

### Video

Each room offers a variety of AV equipment. Sources most often include computers, a Blu-ray Disc player, HDTV tuner, Apple TV, and connectivity for portable devices, such as a laptop. For optimal system performance, analog signals are converted to digital as needed. Display devices include monitors, touchscreens, one or more flat panel displays that range in sizes up to 103", and existing projection systems. Approximately 90% of the rooms have a minimum of a 70" LCD display and a projection system. Two of the spaces are also equipped with the MGP 464 DI multi-window processor, which allows up to four windows to appear on the room's main display.

In the training room, café, and largest meeting spaces, Extron matrix switchers, along with twisted pair transmitters and receivers, enable routing of DisplayPort, HDMI, DVI, RGBHV, VGA, standard video, audio, and control signals. To expand café seating, the



The Phoenix meeting room includes the Extron MGP 464 DI graphics processor to provide multi-window display capabilities at the front of the room.

space was remodeled and its AV system was integrated into the training room's equipment rack, which is located next door. This allows the President of Avnet to call town hall-style meetings for all employees rather than having to repeat a presentation for the various departments.

Some of the rooms include Extron wallplate twisted pair extenders to provide the best use of space and room arrangement flexibility. One unique example of signal extension from a wallplate is in the 30-seat meeting room called Phoenix. Because of the room's location, coring the floor was not possible. The integrator embedded a back box in a leg of the new conference table. Separate HDMI and VGA cables are run up through the table's pass through area and connected directly to an MTP/HDMI U T A D universal twisted pair transmitter mounted in the back box. This innovation proved to be very handy when a pin on a VGA cable was broken just prior to the start of a high level meeting. AVDB simply swapped out the VGA cable, which allowed the presentation to begin on time.

### Audio

Sound systems support playback of audio embedded on an HDMI signal or separate analog audio transmissions. Periodically, embedded digital audio is needed to support other switched content. Extron HAE 100 HDMI Audio De-Embedders incorporated into each AV system enable independent routing of audio, when required. The SI 26CT two-way 70 volt speaker was selected for its 110° conical coverage angle and the wide wattage tap selection from 7.5 to 60 watts to ensure proper coverage and consistent sound quality from room to room. Speaker quantities vary by room. Six of the rooms also include an MVC 121 Plus Three Input Stereo Mixer with DSP. This convenient processor provides a simple means to mix two condenser microphones with the stereo line level signal from the room's video switcher.

The two largest meeting rooms and the 150-seat café include Extron two-channel amplifiers with 200 watts per channel for the 70 volt high impedance speaker systems. According to AVDB, convection-cooled XPA 2002-70V amplifiers were installed because this particular model



Extron TouchLink touchpanels enable complete, interactive control of in-room AV sources and display devices.

has the proven reliability and generates less heat at about half the size of comparable Class D amplifiers, which makes it the best amplifier for his long-time client, Avnet.

### Control

AV devices are primarily operated from within the room, with some control versatility available to company executives. All meeting rooms offer at least one wall-mounted touchpanel, and larger spaces warrant the use of a second or even third touchpanel. In the Phoenix meeting room, interactive control of the AV sources and display devices is available from either the TLP 1000MV 10" TouchLink Touchpanel mounted by the door or the TLP 1000TV Tabletop Touchpanel on the conference table. For presentation to a full room, content is often previewed and monitored on the tabletop unit's full-motion display and its built-in speakers are muted. To reserve power at the table for portable devices, the TLP 1000MV is powered over Ethernet.

### Optimization of the Executive Conference Room

The Executive Conference Room received the most enhancements, including multiple high resolution displays, image windowing, annotation capabilities, and an XTP System for AV signal switching and distribution. The XTP CrossPoint 3200 matrix switcher was selected due to its modular expansion capability up to 32x32 and flexibility to accommodate HDMI and VGA formats for local and remote connectivity of devices within the room. Its all-digital signal routing ensured high quality and reliability of the high resolution content transmitted over twisted pair cabling to the various displays. The XTP System employs several key Extron technologies including EDID Minder®, Key Minder®, and SpeedSwitch® for quick, reliable switching between encrypted and non-encrypted content throughout the system.

The substantial yet elegant conference table seats 20 comfortably, with additional seating available around the room's perimeter. Each seat at the table is within easy reach of one of the 10 Extron HSA 402 tilt-up surface enclosures, which provide dual power and four data connections per enclosure. Architectural Adapter Plates, or AAPs, in the center of each enclosure's faceplate offer additional connectivity



Touchpanels at room entrances are configured to indicate space availability.

for HDMI or USB devices. The pivoting enclosures fit flush with the tabletop, storing connectors out of sight when not in use. The intent of the HSA 402 enclosures is to provide every convenience to board members and guests without marring the beauty of the conference table designed by Lori Fuelberth of Avnet.

The room's displays are recessed into the walls, providing maximum usable space and a high tech image to this elite meeting space. The Panasonic TH-103PF12U 103" plasma display embedded in the front wall and the Samsung 700DX-2 70" LCD flat panel on the side wall offer enhanced viewing for all meeting participants. Similar to the Phoenix meeting space, the Executive Conference Room includes an Extron MGP 464 DI multi-window graphics processor that enables up to four images to appear on the 103" display. The MGP 464 DI, XTP matrix switcher, and other AV components are rack-mounted in a decommissioned rear projection room located behind the plasma display. The repurposing of this space allows temperature control and operational monitoring of the equipment, and reduces the possibility of participants being disturbed by the sound of fans or other mechanical noises.

Unique to the Executive Conference Room is the integration of the Extron Annotator, which is being used extensively to overlay graphics and text on presentations at Board meetings and during project planning sessions. According to AVDB, Avnet executives are particularly pleased with the versatility of the Annotator that allows a presentation to be customized to the audience.

To eliminate the need for a laptop at every meeting, AVDB installed two owner-furnished resident computers in the equipment room. The design includes a wireless keyboard and mouse to control the system from anywhere in the room. Extron HDMI twisted pair transmitters and receivers and USB Extenders provide direct communication with the computers. The lectern also offers AV connectivity for portable devices through an Extron Cable Cubby 200 to a floor box.

The room includes multiple control options. A TLP 1000MV 10" TouchLink Touchpanel is mounted on the wall by the door and a



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AV equipment for the Executive Conference Room is rack-mounted in a room located behind the embedded 103" plasma display.

TLP 1000TV tabletop model is positioned at the head of the table. Typically, the AV system in the Executive Conference Room is activated using the wall-mounted touchpanel, and then controlled from the table. Both 10" models receive power over Ethernet via Extron PS PoE injectors to reserve in-room power for participant use. If the presenter prefers, AV control is available from the custom lectern, which includes a 24" Helio LCD display and resistive touchscreen. The executive administrative staff also has access to one of the room's dedicated computers via the LAN. This allows remote updating of meeting status and posting of notices on the secondary display, such as greeting visitors and announcing breaks.

Outside of the two double-door entries, 7" wall-mounted TouchLink touchpanels provided by AVDB indicate the status of the room. When the space is available, screens display "Unoccupied" and status lights are green. Logging into the AV system from either of the room's two 10" touchpanels or the lectern's touchscreen causes the entry screens to display "Occupied" and changes the status lights to red. This functionality ensures others don't walk into a meeting in error and lends an air of high technology to the Executive Conference Room. "AVDB is known for pushing the envelope on what a product can do and that's just what we did with the number and diversity of touch devices at Avnet; Extron was right there to help every step of the way," says Waverley.

Once the system is activated, any of the three touch devices can provide environmental control as well as AV equipment operation. Extron IPCP 505 and IPL T CR48 IP Link® control processors enable automated adjustments to lighting levels, blinds, etc. According to company representatives, control of the AV system and the



Multiple AV control options are located throughout the room, including from portable devices such as an iPad.

environment from the entrance, table, or lectern has impressed their global clientele.

Due to the extensive AV upgrade and other room enhancements, the Executive Conference Room is always in high demand. "The XTP System, touchpanels, Annotator, and the rest of the Extron equipment provide the high performance that's needed without detracting from the sophistication of Avnet's Executive Conference Room," says Waverley.

At the successful conclusion of system commissioning, AVDB presented Avnet with an engraved iPad that enables remote AV control. The addition of Apple TV to the project allows presentation directly from this or any other company iPad without requiring advanced setup. The AV system can be controlled in any upgraded space, including small to large sessions in the various meeting rooms, visits to the training room, and all-hands events in the café. Avnet CEO, Rick Hamada, is known to keep the engraved iPad with him wherever he goes.

### Results

From the initial planning stage to the installation of operational AV systems in each space, the headquarters upgrade project was completed in only three months. AVDB, the general contractor, and the various crews worked primarily after hours and on weekends to complete the project on schedule while avoiding disruptions to business. The AV systems at the Avnet headquarters have been running problem-free for more than a year. According to the integrator, his client is quite pleased with all aspects of the upgrade. "Avnet trusts us to do the job right using the best gear; that's why we installed products from Extron," says Waverley.

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