

# Extron Uses Active Twisted Pair Technology for Superior Image Quality in Classroom AV Systems



In many classroom presentation systems, there are significant advantages to transmitting AV signals over CAT 5-type twisted pair cable rather than standard coaxial cable. The benefits include low cost, wide availability, and ease of installation. While the advantages of CAT 5-type cabling are significant, it is important to know that not all twisted pair AV transmission systems are created equal when it comes to image quality and reliability.

The CAT 5 cable itself creates limitations that need to be addressed for high quality AV systems. Its physical construction leads to greater signal loss over long distances as compared to coax. Also, variances in individual pair lengths result in skew, or a distortion in the image caused by the late arrival of one or more color signals. These factors can degrade the integrity of video signals and result in reduced image brightness and clarity as well as compromised image stability. So, how do you overcome these challenges, yet still take advantage of twisted pair in the classroom?

## The Extron Twisted Pair Advantage

Extron PoleVault® and WallVault® classroom AV systems are designed to address these issues. They use active twisted pair technology, which has distinct advantages over a passive system approach.

**Image Brightness** – The brightness of an image can be affected by signal loss. Passive systems do not compensate for signal loss within the cable, which results in a dim image. Extron active transmission, on the other hand, increases the signal level to correct for loss. The result is a stronger signal and brighter image from the display.

**Image Sharpness** – Skew, or color misalignments, compromise detail and sharpness in the image. Passive systems that do not address this issue can produce fuzzy images that may be difficult for students to see or cause excess fatigue. Extron active transmission incorporates skew equalization to provide optimal detail and sharpness.

**Image Stability** – Proper sync between the source and display device is essential for an image to be displayed correctly. In passive systems, signal loss may result in sync jitter, causing the display device to improperly recognize the signal and output the wrong resolution, offset the image, or produce no image at all. Extron active transmission applies sync conditioning and delivers the proper signals, ensuring that the image is displayed and centered accurately on the screen.

By using Extron active twisted pair technology, Extron PoleVault and WallVault classroom AV systems consistently deliver bright, sharp, and stable images to the display.