



To ensure the reliability and performance of mission-critical environments, Constant Technologies mandates the use of **Shielded Cat6A 550MHz cabling** for all specialized audio-visual (AV) signal distribution. Our enterprise standard is **Shielded Weltron Cat6A 550MHz**, a requirement driven by the high-bandwidth demands of modern video processing.

### **Why Shielded Cat6A 550MHz Is Required**

The primary driver for this requirement is the need to support **uncompressed 4K60 signals**. To transmit this level of detail over extension hardware, such as **Extron DTP systems**, the underlying infrastructure must support data rates that approach the practical limits of copper cabling.

- **Signal Stability**
  - Lower-rated cables (such as 350MHz Cat5e or Cat6) lack the necessary headroom to consistently maintain signal integrity for 4K60 video. Historically, the use of lesser-rated cabling has resulted in intermittent image flickering, digital artifacts (“sparkles”), and, in some cases, complete signal dropouts.
- **Distance and Bandwidth**
  - While 350MHz cabling may function at very short distances, only the 550MHz rating of Shielded Cat6A provides the bandwidth headroom required to maintain stable performance at the maximum distances supported by Extron hardware.
- **Interference Mitigation**
  - Shielded Weltron Cat6A cabling provides enhanced protection against **alien crosstalk (AXT)** and electromagnetic interference, which is particularly critical when cabling is bundled in tight conduits or installed behind video wall displays.

### **AV Infrastructure vs. Client Network**

It is important to note that this requirement applies exclusively to the dedicated AV point-to-point infrastructure (the “private” cabling between transmitters, switchers, and displays).

This requirement does not dictate standards for the client’s internal corporate network. Clients remain free to utilize their preferred cable category for standard data networking. However, for the high-performance AV signals installed and supported by Constant Technologies, the **Shielded Weltron Cat6A 550MHz standard** is required to ensure a stable, flicker-free visual environment.