



Useful considerations when comparing wireless and Magenta's MultiView™ Series, Cat5-based signal extension methods

Wired and wireless approaches to local area video distribution both have merit. The question system integrators face is, when does it make sense to use one versus the other? In real environments, can wireless be as robust as wired?

Magenta Research's MultiView™ product line is designed and optimized to function flawlessly under the rigorous demands of the commercial environment. Unlike other UTP video signal management products, MultiView is a commercial grade product by design. All MultiView products have the following characteristics:

- **World class video image presentation quality**
- **Complete format agility – no limitations**
- **Compatibility with Magenta Cat5 switching and distribution equipment, from any number of sources to any number of displays**
- **Accurate sync signal reproduction**
- **Electrical and mechanical ruggedness**
- **Resistance to sources of electrical interference**
- **Plug and play ease of installation**
- **“Married” resolution, frame rate and distance specifications – no “up to specsmanship”**

The result is the ability (for example) to transmit UXGA resolution (1600x1200) computer video at 60Hz refresh rate, plus stereo audio and serial, 1500 feet (457 meters) over a singular unshielded Cat5, to hundreds of local displays.

In contrast, wireless approaches, while providing convenience and flexibility in display positioning, are impacted by the following:

- **Line of sight / difficulty in penetrating walls and floors, especially with the 802.11a wireless standard**
- **Unreliability with distances beyond 100 feet (30.5 meters)**
- **Non Wi-Fi devices, including Bluetooth headsets, wireless video cameras, cordless phones and microwave ovens can degrade the performance when using the 802.11b and 802.11g standards**
- **Resolution limitation (640x480) due to available bandwidth (average actual throughput is 27 Mbps or less, depending on the wireless standard). Even though the specifications might say it's compatible with 1280x1024, wireless typically down-converts to 640x480.**
- **Multiple-content distribution limitation due also to bandwidth**
- **Content: not truly compatible (i.e. glitch-free) with full-motion video**

Note that MultiView does NOT convert down, nor compress/decompress, and it's NOT buffered streaming video. Therefore video, audio and/or serial get transmitted without any noticeable delay, at approximately 0.7c or 7/10 the speed of light.

The MultiView Series therefore has:

- **No timing issues (multiple displays in perfect sync, audio in perfect sync with video)**
- **No glitches or hesitation**
- **No problems with high-resolution computer video or full-motion video frequently used in dynamic signage applications**
- **No limitations on the number of different content sources in a given location**
- **No limitations due to building construction or objects in signal path (such as tractor trailers at a gas station)**

In other words, at some point multiple wireless signals in the same area will conflict with each other, given the constraint of the available bandwidth.

Wired vs. Wireless Considerations

MultiView provides approximately 6X to 10X the distance and 10X the resolution in terms of the number of pixels, i.e. true UXGA at 1500 feet and QXGA at 1000 feet.

The breadth of the MultiView Series provides many more distribution and form-fitting options than wireless, which is principally point-to-point. MultiView's building-block approach fits the equipment to the need, minimizing capital expense.