

Handling Coax, UTP Cables During Installations

by Bob Grossman | March 30, 2011

"There's a lot of coaxial cable out there."

"The 100 meter limit for Ethernet over copper presents some installation challenges."

I think there are very few people involved in the installation of IP-based CCTV systems that would disagree with either of the above statements. In an upcoming study featured in *SECURITY SALES & INTEGRATION's* April 2011 issue, research shows integrators are still using coax in 39 percent of new installations, so there is going to be a lot of coax out there for the near future. Moreover, even those using unshielded twisted pair (UTP) for analog video (the same study shows that is gaining and rose 2 percent to 14 percent last year) aren't tied to the distance limitations of Ethernet, a contributing factor in the use of those products. Any way you look at it, you'll be contending with long cable runs of UTP or coax as you upgrade these systems in a market that is clearly moving to IP.

As a result, we are seeing an ever-increasing demand for media converters, in particular the ones that overcome these limitations. Often called "Ethernet extenders," these devices allow IP Ethernet transmission of network data to communicate over an existing coaxial cable for distances up to 2,500 feet (750 meters); with UTP cable the distance limit can be extended up to one mile (1,600 meters). Naturally the transmission speed varies based on losses that occur from cable length, signal noise and interference, but the units generally auto-negotiate bandwidth, making it transparent to the installer and end user.

In fact, one of the problems with these devices is their ease of installation. There is absolutely no set up or configuration; installation requires simply connecting the BNC connectors at each end of the existing coaxial cable to the transmitter and receiver. They are completely transparent to the network and do not even have IP or MAC addresses. So, why is this a problem? Because of the simplicity, Ethernet extenders are becoming commodity devices in the eyes of the installer and nothing could be further from the truth.

In the past year, we have seen hundreds of these devices fail at client sites both in the U.S. and internationally. Not all brands are prone to failure; we have replaced a number of failed units with Nitek VR-series units (VR124COAX and VR124UTP) and have not seen a single failure with the Nitek units in over two years. However, we have seen at least one brand with almost a 100 percent failure rate at certain locations, and our predictions of failure are uncanny in the eyes of our clients when we see that particular brand installed.

So what should you look for? While we like Nitek, that is based on personal experience and we're not saying there aren't other great units out there. Like anything else, look at references, installed base, track record, and construction before choosing and standardizing a brand. We've also discovered that size matters as well — the units that fail frequently are often more compact, no doubt because they haven't been encumbered by robust surge suppression or quality components that may take up more space. To that end, make sure that the box you put these devices in is sized for a larger unit. That way, if you inadvertently chose one of the failure prone devices, you won't have the added expense of replacing junction boxes with larger ones like we did!

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