DIY HD Termination System

The do-it-yourself HD termination system is a wonderful tool to add to your tool box of solution fixes. You can terminate an HDMI® cable in the field in a matter of minutes. This particular finished cable is not an HDMI® cable per se because HDMI, LLC requires any cable to be ATC tested and certified in order to be called an HDMI cable. Here are the Liberty part numbers referenced for this document:

Bulk Cable: **DL-HDMCBL-250** and **DL-HDMCBL-500** (250 and 500 foot spool)
Connectors: **DL-HDMCPK** (10-Pack)
Crimp Tool: **DL-HDMHT**

This system is a niche product. It cannot compete against low cost HDMI cables on the market, nor is it intended to be for that purpose. It is a tool. There are always those installations that are outside the box. Where your cable must be exactly 7 feet 3 inches in length or you need to fish the cable through a ¼" hole. Or you are almost finished with a job and realize you are three cables short for the job, you can whip these up and complete the job without another day lost or an additional run for parts. Many installers like this to simply dress out a rack to the nth degree.

This cable is finicky to work with. When you are prepping this cable, you might want to hurry the process by snapping off the foil shield wrapped around the flat ribbon cables. Don't do it! Instead gently peel the foil down the seam to the bottom and nick it, then peel it off. If you pull on that foil to snap it off, those 30 AWG wires can break. I've done it myself. Go gently. Another critical step is when you trim off the excess flat ribbon cable. Ensure that the sleeve and cable are fully seated flush and square in the tool before cycling the tool. If you leave cable showing, especially at a protruding angle, then you compress and complete the IDC termination, things can go awry and you get an open circuit or a performance issue. I've done this too and demonstrated it on purpose to some customers and technicians.

The application for this product is also something to consider. This system was designed to connect a source to a display. It was not designed to use in a system where there might be pass through passive junctions and then more cable on the other side. The tiny 30 AWG wire has a lot of loss. The HDMI receptacles on the source and display have 5 volts DC. Or at least they are *supposed* to have 5 volts DC. 3.3 volts are used during processing and that leaves 1.7 volts remaining. The voltage drop on 30 AWG wire is such that 55 feet is the maximum for 1.7 volts. That assumes that there are no passive junctions and the source and sink are completely to the HDMI specification with their 5-volt power. If the circuit has passive junctions then those contribute to loss. If there are additional cables added after the junction, they contribute more to the losses and reduce the distance for the DIY cable even further.

This author has used this system quite a bit and extensively ran it through its paces. Using Quantum Data test equipment I can safely say out to 25 feet | 8m you can send 1080p24 8-bit color without a bit error. If you stretch this to 29 feet | 9m you may have a machine noted bit error here and there at 1080p24. Your eye will not see it. The digital cliff is breached at that distance and the performance vanishes quite quickly, by 30 feet the bit errors are cascading. This is all tested in a Laboratory with calibrated equipment where everything is to the HDMI specification. Do you want to take that chance in the field? …With consumer grade equipment? 25 feet is a good number, over 25 feet you are now at the mercy of variables from the equipment manufacturers.

The in-line booster performs quite well but you are still at the mercy of the 5 volt power limitations. You cannot exceed 55 feet with the booster. It can offset some of the introduced issues caused by attenuation with shorter lengths. It can be used to offset the effects of a passive junction to a point. It is always best to test your installation in the shop prior to taking it to a customer's site.

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