PXLDRIVE™

Corralling the 18G Beast

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Introduction

In professional AV installations, how did we get to the point where HDMI connections everywhere - once standing proud, carrying glorious 1080p signals, start to fail with the insurgence of 4K? Perhaps a more topical question, why did the recently installed 4K interconnect solutions start failing when the latest and greatest HDMI 2.0b enabled equipment was connected around them? The same symptoms are always there - Sparkles, mysterious and random (and sometimes periodic) video drop outs and the dreaded "No Image Found" OSD error. Yes, it's ruined all of our days at one point or another. The answers to these questions are complex, highly technical and snooze-worthy.

To avoid all explanation, ideally, we the hardware manufacturers, could engineer efficient and reliable future-proofed HDMI connectivity products. Permanent HDMI extension technology to help in long haul HDMI applications - sadly, standards evolve and connectivity solutions become obsolete, unable to support the latest and greatest. Predictably installers band together (and understandably so) and it's suddenly a "Grab your spear and pitchforks!" situation towards the manufacturers. I get it - it's frustrating. However, I will do my very best to untangle where things may have gone wrong, but more importantly, I will say right from the get-go to take a deep breath. Everything is going to be ok. There are some amazing products out there that will allow you to run 18G with ease up to some extraordinary reaches. Is now a bad time to mention that all of the solutions I will speak of will be obsolete with the looming HDMI 2.1 standard? I digress.

Background

If you've chosen to read on, first off, I know most are quick to blame HDCP. I am here to say that while the improper implementation of HDCP extension can cause issues, the fact of the matter is, the high-speed signals that supports max 4K HDMI standards (18Gbps) is what is causing the most headaches now regarding HDMI 2.0 equipment compatibility issues, specifically in long reach applications.

In the beginning, the only answer to achieving robust HDMI long reach signal recovery (say above 5m) was just to make the cable as thick as possible to accommodate the eight large 22AWG (or 24 AWG) wires necessary to connect to HDMI displays as far away as possible. The side effect, of course, is that this caused an industry-wide stigma towards passive HDMI cables in the ProAV industry; large basketball sized bend radiuses to/from HDMI equipment therein breaking HDMI ports altogether. That and a tidal wave of random budget HDMI boosters relied upon to fix the problems (either in-cable or detachable form).

" PXLDRIVE™ is the industry's first active long reach THX® Certified 4K Interconnect. Capable of reviving uncompressed signals up to the maximum 18Gbps UHD bitrate over new or pre-existing HDMI cable, PXLDRIVE™ fills one of the biggest 'missing links' in the custom installation market – a reliable and economical full-bandwidth solution."