Bowen Technovation

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"The Trouble IS in your Set…or"
"Why Your Video May Not Work after 2013." Part II

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Pre-requisite: Read the first installment of this in the June 2012 Planetarian.

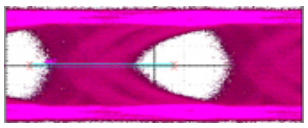
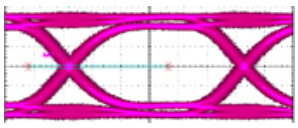
In the first installment we discussed important subjects such as:

- The immediate phase out of computer RGBHV (VGA) connections beginning in 2013 with the technology to be off product lines by 2015 at the latest.
- Analog Sunset – 2010. All Bluray players, HDTV tuners, etc have utilities burned into their chipset that will automatically turn off the component, composite, VGA and S-video outputs on December 31, 2013
- Proper installation of a new DVD player, Blu-ray player, HDTV tuner, or computer.
- Why using a little adapter to convert your HDMI/DP port to VGA won't work. The reason is HDCP
- Adding a video source converter or scaler/switcher.
- Mismatched projector and device resolutions.

Onward…

Cable Length and Extenders

If you review the distance limitation table (Table 1.) in the first article, you see quickly that video signals are not designed for use with long cables. Some only work accurately with distance as short as six feet (1.8m). The minute you exceed these lengths you are degrading the video signal, how much degradation of the picture quality is acceptable is up to you, but be assured any length above what is shown in the table introduces degradation.

Degraded video signal		Correct video signal	

The most modern and most popular way to protect the signal is via the use of UTP (Universal Twisted Pair) extenders, or also thru some less common, more expensive fiber or co-ax extender systems. The little UTP converter systems are the industry standard and use very low cost, small diameter Ethernet cable. These are available for all audio, video and control types such a HDMI, DisplayPort, DVI, VGA (RGBHV), serial, 232, etc. They typically use one or two CAT5 or CAT6 cables, depending on the manufacturer and the extended distance between devices. One type is pictured at the right, but there are many more photos available in the PowerPoint from our IPS workshop. An extender "kit" consists of a "sender/transmitter" and also a receiver. You select the extender kit based on the resolution of your video…and the length of the proposed cabling. BTW…extenders are also used for USB, keyboard, mouse and other signals when they are run long distances.

Cable Types

One thing to keep in mind is that for audio/video work CAT6 is not better than CAT5. You must use the cable type that the extender manufacturer recommends. Period. If you want to know why, just contact Mark Trotter or me and we'll explain it to you.

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Audio Cables

Most of you know that 2-conductor unbalanced audio (typically RCA connectors) is only reliable for up to 15 feet (4.6m) Very low cost CAT5/6 extenders are also available for unbalanced audio that can extend the signal hundreds of feet.

But in a modern HDCP compliant video system most of the audio is digital and is carried along on the same HDMI or DisplayPort cable and connectors as the HD video. So how do you get it into your audio system?

Decoders and Audio

What we do is run the digital video signal thru a decoder, often built into a switcher. The decoder breaks out stereo, 5.1 or 7.1 audio streams from HDMI and DisplayPort signals and converts them into the proper signal to be routed to your stereo or surround sound audio system. The best decoders will decode all the various formats of DTS, Dolby, PCM…but not all do. A good decoder can also be controlled via your theater control system and should provide professional three-wire balanced outputs.

Well…this could go on and on, but The Planetarian has devoted enough space to this topic. Your are invited to study this topic more on any of the numerous websites out there, or just contact any of us at BT for more info and advice.
