DisplayPort Divulged

In the Consumer Electronics market, it sometimes feels like a new connector is being introduced every time you turn around. In this article we are focusing on DisplayPort, a royalty-free digital display interface standard backed by computer industry giants Apple, Dell and HP.

For consumers, DisplayPort is a connection that is primarily intended as a computer audio/video solution. It carries HD video resolutions up to 2560 x 1600 with 10-bit color along with optional surround sound audio. The PC industry is embracing DisplayPort technology as well because this single digital interface can connect both internal and external displays. DisplayPort can directly drive display panels eliminating certain control circuitry allowing for cheaper and slimmer displays.

Replacement for DVI

DisplayPort is intended to replace DVI on computers and computer monitors. Let's take a moment to examine the physical aspects of what separates it from its predecessors. DisplayPort connectors have a small, USB-sized form factor and are secured by a self-latching mechanism as opposed to thumbscrews. The connector pins don't run the risk of bending if improperly handled. Furthermore, the cable itself is remarkably slimmer than DVI or even SVGA cables.

Let's now focus on what consumers really are concerned with: picture quality. Currently, DVI (digital visual interface) has reached a performance ceiling with a maximum bandwidth of 1920x1200. This means it is currently ill-suited to meet the ever-greater demands of HD content as well as being incapable of driving ultra-high resolution screens like the latest 30-inch for example. Enter DisplayPort to change this. At its core, DisplayPort allows for data transmission at rates up to a whopping 8.64 Gbit/s. Single link DisplayPort will support a maximum resolution of 2560 x 1600 for a 2 meter cable meaning that it will even drive your 30" Apple Flat Panel Cinema Display at its optimum resolution. In addition, each DisplayPort cable comes with an auxiliary bi-directional data channel capable of 1 Mbit/s to carry data for touch-panels, web cams, microphones, etc.

Another great feature about DisplayPort is that it can easily be converted to VGA, DVI or HDMI with the use of adapters. It cannot, however, be converted to analog television connections such as composite video, s-video, and component video.

One Cable to Rule Them All

One feature that makes DisplayPort unique in this ever-crowding field of video cables is its ability to directly drive display panels. DisplayPort can replace the internal, board-to-display, LVDS (low voltage differential signaling) links in both PC and CE devices meaning that both the DVI controller and VGA silicon are eliminated. This allows for substantial cost savings for manufacturing which should be passed on to the end user. Additionally, laptops utilizing internal DisplayPort wiring will need less cabling between the computer's body and display an area where space is already at a premium. Performance too will be enhanced as DisplayPort provides a directional channel with ability to perform additional functions such as notebook backlighting control.

Audio Too on the Horizon

While the current version of DisplayPort (v1.1a) supports up to 8 channels of 24 bit audio at up to a 192 kHz sampling rate, this impressive feature is as of yet unsupported by both Apple and Dell computers. For each offering, one has to use an additional USB, TOSLINK or other digital cable between the computer and display for digital sound output.

Future Features

DisplayPort's future is bright as well with an impressive list of planned features its designers hope to incorporate in the coming years. Chief among these is a proposed doubling of the bandwidth, which would allow for increased resolutions, higher refresh rates, and deeper color depth. Other future developments include support for multiple independent video streams (daisy-chain connection with multiple monitors), an increased auxiliary channel bandwidth and even stereoscopic 3D. While some of these developments may be years down the line, DisplayPort 1.1a does currently include support for fiber optic cables as an alternative to copper, allowing a much longer reach between source and display without signal degradation.

Hardware Wars - DiSplayPort vs HDMI

When DisplayPort was first envisioned to replace DVI years ago, HDMI was but a blip on the horizon. However, years went by before

DisplayPort's initial specs were ratified in 2006. By this time, HDMI had risen to encompass not only the CE world of HD televisions, but came standard on many PC graphics cards as well. Both DisplayPort and HDMI share many similarities such as high bandwidth; audio, data and video signal capability, high definition copyright protection HDCP and small form factor cabling and connectors. With this in mind, why are there both cables and is this another VHS vs. Betamax showdown? Well, time will tell on the latter but each of these cable interfaces was designed to serve distinct purposes. DisplayPort was created to replace VGA, DVI, and internal LVDS interfaces on PCs. HDMI on the other hand was designed to overcome the limitations of Component and S-Video interfaces for the world of consumer electronics. Whichever side you choose to ally with, DisplayPort or HDMI, you can feel comfortable knowing that we have your all your HD video cable and adapter needs covered at CableWholesale.

DisplayPort Adapters - What Will I Need?

DisplayPort to DVI

This is our DisplayPort to DVI adapter. You will need a DVI-D male to male cable in addition to this adapter. DVI does not carry audio signal so you will need a separate audio cable.

DisplayPort to HDMI

This is our DisplayPort to HDMI adapter. You will need a HDMI male to male cabl in addition to this adapter. HDMI and DisplayPort both carry audio, but make sur your computer is capable of sending audio through the DisplayPort connection.

Mini DisplayPort

The Mini connector is currently only found on Apple computer products. The next revision of the DisplayPort spec (v1.2) is expected to add the Mini DisplayPort. Wher that happens, it is possible for other devices to start showing up with this connection. Mini DisplayPort has the same functionality as the standard DisplayPort. As was previously mentioned, computers that currently have Mini DisplayPort including all Apple products do not have audi functionality at this time. You will need a separate audio cable for those instances.

CableWholesale carries a complete selection (including DVI, VGA and HDMI varieties) of Mini DisplayPort adapters to connect your Apple computer or PC to your display.
