

PEAK Class 101: VGA vs. DVI vs. HDMI vs. DisplayPort

To accommodate today's ever-expanding audio-visual (AV) experience, we need better computer systems, better AV equipment, and of course, high-quality media content (CDs and DVDs). One key element we tend to leave out is the "transfer medium" – the cables connecting it all together! You may have the best LCD/plasma display bundled with that top-line DVD player, but without the correct cables, you won't get the best picture possible from those high-end components. We'll briefly introduce some of the most popular AV interfaces you see on the market today.



VGA



Introduced with IBM's PS/2 line of computers back in 1978, the VGA (Video Graphic Array) connection interface is the lowest common denominator of today's video displays. This analogue-only technology is capable of displaying images at 640x480 (at least in its original form).

Throughout the years, the resolution has been progressively increased to QXGA with 2048x1536 as the standard resolution. Although considered an analogue-only technology, it is the most commonly-encountered interface of all.

DVI



Introduced by Digital Display Working Group in April 1999, DVI (Digital Visual Interface) is the gold standard when it comes to digital interfaces. Designed with the latest liquid crystal displays (LCD) or flat panel displays in mind, the DVI interface uses a digital protocol in which the desired

illumination of each pixel is transmitted as binary (digital) data, which improves the video quality dramatically. Most flat panel displays on the market today have at least one DVI port.

HDMI



HDMI, or "High-Definition Multimedia Interface" is the next wave of pure digital joy. HDMI is an uncompressed, all-digital signal source which is capable of handling high-definition graphics with audio. This is probably its biggest difference from all previous video display technologies. Both video and

audio are transmitted using one signal cable. Movie rendering at 1080p resolution is sent digitally via the HDMI interface from your DVD player to your LCD display for the maximum quality. More and more AV components are using HDMI as their only interface.

DisplayPort



DisplayPort is the new digital display interface standard using the latest digital technology. Introduced by VESA in May 2006, DisplayPort is a license-free, royalty-free interface set to compete with HDMI and DVI. While HDMI is aimed primarily at home entertainment systems, DisplayPort

focuses on the PC industry. Its license-free, royalty-free attributes are expected to rapidly accelerate its market-share as the new display standard.



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