UNIGRAF

Display Stream Compression (DSC)

Introducing Display Stream Compression (DSC)

VESA, the Video Electronics Standards Association, published Display Stream Compression (DSC) in 2014. DSC enables visually lossless image compression to increase the amount of data carried by a display interface data rate, saving power. For example, the table below shows the supported single display setups for DisplayPort 2.0 specifications with and without DSC.

Single Display Setup (DP 2.0)	Without DSC	With DSC
Resolution	10K (10240x4320)	16K (15360x8460)
Refresh rate	60Hz	60Hz
Color depth	24 bpp 4:4:4	30 bpp 4:4:4 HDR

What are the main applications for the DSC Standard?

The initial application for DSC is portable, battery-powered systems with an embedded display. DSC is used in the internal embedded display interface to save system power, which extends battery life, and to reduce the system form factor's weight, and costs by decreasing the number of interconnected wires. It also decreases the display's frame buffer size which further decreases cost. In the future, DSC will be used to further increase display resolution for external displays. For example, DisplayPort 1.4a supports 8K video at 60Hz and 24-bit color using a low 2:1 compression ratio or 30-bit color using a low 2.5:1 compression ratio, which will provide visually lossless image quality (indistinguishable from the original image), unlike the use of chroma subsampling.

Source: VESA