DisplayPort Reaches 2.0 With 8K Support

Written by Frederick Douglas
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The Video Electronics Standards Association (VESA) releases version 2.0 of the DisplayPort (DP) standard-- a first major update since March 2016 providing an up to 3X increase in data bandwidth compared to the most recent version, DP 1.4a.

In total DP 2.0 handles up to 77.37Gbps of bandwidth, with a maximum link rate of 20Gbps/lane and more efficient 128b/132b channel encoding. Thus it promises to address the requirements of future displays, such as "beyond 8K" (7680 x 4320) resolutions, higher refresh rates and high dynamic range (HDR support at higher resolutions, improved multiple display configuration support and an improved user experience with augmented/virtual reality (AR/VR) displays, including support for 4K-and-beyond VR resolutions.

The advantages of DP 2.0 run across both the native DP connector and the USB-C connector carrying DP audio/video signals through DisplayPort Alt Mode. DP 2.0 is backwards compatible with previous versions of DisplayPort, and incorporates all features of DP 1.4a. Thus it supports visually lossless Display Stream Compression (DSC) with Forward Error Correction (FEC), HDR metadata transport and other advanced features.

The increased video bandwidth carries over the USB-C connector, allowing simultaneous higher-speed USB data transfer without compromising display performance. DP 2.0 also leverages the Thunderbolt 3 physical interface (PHY) layer while maintaining the flexibility of the DP protocol in order to boost data bandwidth and promote convergence across industry-leading IO standards.

The new data rates of DP 2.0 come with a display stream mapping protocol common to both single- and multi-stream transport. The common mapping facilitates multi-stream transport

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support of DP 2.0 devices for a single DP port on the source device to drive multiple displays via either docking station or daisy-chainable displays.

The first products featuring DP 2.0 are set to launch by late 2020.

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