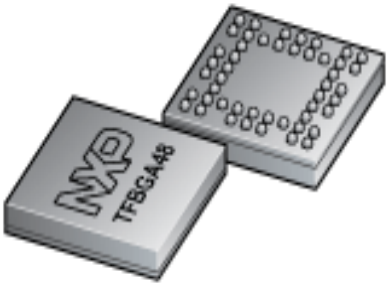
Breakthrough Performance in DisplayPort and HDMI Switches



NXP Semiconductors announced two high-performance switches supporting DisplayPort and HDMI architectures. The latest additions to NXP's high-speed computing portfolio include the CBTL06DP213 [1], a bi-directional switch for DisplayPort 1.2 applications featuring industry-leading bandwidth over 11 GHz; and the CBTL06GP212 [2], the industry's first switch to enable simultaneous support for both DisplayPort 1.2 and HDMI 1.4. Both are multi-channel capable devices designed using NXP's high-bandwidth analog pass-gate technology. NXP will demonstrate the new switches at the Intel Developer Forum (IDF2012) in San Francisco, Sept. 11-13.

"DisplayPort and HDMI have evolved to support very high-bandwidth audio/visual applications, and OEMs worldwide are embracing these standards in computing systems, mobile devices and displays," said Grahame Cooney, general manager, high-speed interfaces and clocks, watches and graphics drivers, NXP Semiconductors. "By delivering extremely high speeds and excellent performance, NXP's interface components are enabling the design of high-performance DisplayPort and HDMI systems meeting rigorous OEM requirements. With the CBTL06GP212, we're also enabling exciting new combo connectors that provide all-in-one support for both DP and HDMI."

DisplayPort 1.2 Switch With Outstanding Performance

The CBTL06DP213 is NXP's third-generation high-performance DisplayPort multiplexer featuring extremely high bandwidth exceeding 11 GHz, as well as excellent signal integrity characteristics with exceptionally low return loss. By minimizing signal degradation, the CBTL06DP213 also minimizes the number of active components required in connectors and cables connecting PCs, notebooks and tablets with external monitors, docking stations and other peripherals. The CBTL06DP213 supports DP 1.2, DP 1.1a and eDP (embedded DisplayPort) operating at 5.4 Gbps, 2.7 Gbps or 1.62 Gbps. NXP has collaborated with key customers to define key parameters and to achieve excellent signal integrity performance on customer products at the platform level.

Hex Switch for Gen2 Speeds, Wide Common-Mode Voltage Range

The CBTL06GP212 is a new six-channel switch for DisplayPort, HDMI and PCI Express applications at Gen2 speeds – 5.0 Gbps for PCI Express, 5.4 Gbps for DisplayPort, and 3.4 Gbps for HDMI. Featuring an exceptionally wide common-mode voltage range (3.6V) and low insertion loss, the CBTL06GP212 is the industry's first switch to enable simultaneous DisplayPort 1.2 and HDMI support, reducing the number of additional components required, and enabling the design of compact combo connectors.

The CBTL06GP212 provides four differential channels capable of 1:2 switching; 2:1 multiplexing of bi-directional, AC-coupled PCI Express or DisplayPort signals; or 2:1 multiplexing of DC-coupled TMDS signals. Further, it is capable of 2:1 multiplexing of Hot Plug Detect (HPD) signals, as well as 4:1

multiplexing/switching for Auxiliary (AUX) and Display Data Channel (DDC) signals. The CBTL06GP212 provides a shut-down function to support battery-powered applications.

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