

DEVELOPER UPDATE

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USB Promoter Group Announces USB4 Specification

Specification defines next generation USB protocol architecture and doubling bandwidth to extend USB Type-C™ performance

Beaverton, OR, USA – March 4, 2019 – The USB Promoter Group today announced the pending release of the USB4 specification, a major update to deliver the next generation USB architecture that compliments and builds on the existing USB 3.2 and USB 2.0 architectures. The USB4 architecture is based on the Thunderbolt™ protocol specification recently contributed by Intel Corporation. It doubles the bandwidth of USB and enables multiple simultaneous data and display protocols.

The new USB4 architecture defines a method to share a single high-speed link with multiple end device types dynamically that best serves the transfer of data by type and application. As the USB Type-C™ connector has evolved into the role as the external display port of many host products, the USB4 specification provides the host the ability to optimally scale allocations for display data flow. Even as the USB4 specification introduces a new underlying protocol, compatibility with existing USB 3.2, USB 2.0 and Thunderbolt 3 hosts and devices is supported; the resulting connection scales to the best mutual capability of the devices being connected.

“The primary goal of USB is to deliver the best user experience combining data, display and power delivery over a user-friendly and robust cable and connector solution,” said Brad Saunders, USB Promoter Group Chairman. “The USB4 solution specifically tailors bus operation to further enhance this experience by optimizing the blend of data and display over a single connection and enabling the further doubling of performance.”

Key characteristics of the USB4 solution include:

- Two-lane operation using existing USB Type-C cables and up to 40 Gbps operation over 40 Gbps-certified cables
- Multiple data and display protocols to efficiently share the total available bandwidth over the bus
- Backward compatibility with USB 3.2, USB 2.0 and Thunderbolt 3

With over 50 companies actively participating in the final stages of review of the draft specification, the USB4 specification is on track to be published around the middle of 2019. Coincident with the release of the USB4 specification, the release of an updated USB Type-C Specification will be made to comprehend USB4 bus discovery, configuration and performance requirements.

USB Developer Days 2019, in the second half of this year, will include detailed technical training covering the USB4 specification and the latest for USB Type-C, USB Power Delivery, and other exciting topics.

This update is part of the USB performance roadmap and is specifically targeted to developers at this time. Branding and marketing guidelines will be established after the final specification is published.

“Releasing the Thunderbolt protocol specification is a significant milestone for making today’s simplest and most versatile port available to everyone,” said Jason Ziller, General Manager, Client Connectivity Division at Intel. “By collaborating with the USB Promoter Group, we’re opening the doors for innovation across a wide range of devices and consumer experiences to maximize adoption of Thunderbolt compatible products.”

“USB4’s high throughput and advanced features enable new scenarios in consumer, enterprise, and intelligent edge markets, while maintaining interoperability with existing USB and Thunderbolt 3 devices,” said Roanne Sones, Corporate Vice President, Microsoft OS Platforms. “We are excited to work with our partners in the ecosystem to bring USB4 to market and showcase its benefits.”

About the USB Promoter Group

The USB Promoter Group, comprised of Apple Inc., Hewlett-Packard Inc., Intel Corporation, Microsoft Corporation, Renesas Electronics Corporation, ST Microelectronics, and Texas Instruments, continues to develop the USB family of specifications to meet the market needs for increased functionality and performance of USB solutions. Additionally, the USB Promoter Group develops specification addendums (USB Power Delivery, USB Type-C™, and others) to extend or adapt its specifications to support more platform types or use cases where adopting USB technology will be beneficial in delivering a more ubiquitous, richer user experience.

About the USB-IF

The non-profit USB Implementers Forum, Inc. was formed to provide a support organization and forum for the advancement and adoption of USB technology as defined in the USB specifications. The USB-IF facilitates the development of high-quality compatible USB devices through its logo and compliance program, and promotes the benefits of USB and the quality of products that have passed compliance testing. Further information, including postings of the most recent product and technology announcements, is available by visiting the USB-IF website at www.usb.org.

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