



## THE COMPACTFLASH ASSOCIATION ANNOUNCES CFexpress\* 1.0 Specification

Cupertino, California – April 18, 2017 - CompactFlash Association (CFA), the organization responsible for the widely adopted professional removable media specifications such as CompactFlash®, CFast® and XQD®, announced the release of CFexpress\* 1.0 specification.

### CFexpress\* 1.0 Introduces PCIE® Gen3 / NVM Express® Format Capable of Up to 2GB/sec

A next generation specification based on the proven and popular PCIE® interface, and the highly efficient NVM Express® stack, for applications requiring high throughput and low latency in a small enclosed form factor.

As a natural evolution of CFAST® 2.0 and XQD® 2.0, the CFexpress\* 1.0 is designed to meet future requirements for applications in various verticals:

- Imaging: improved data rates in enthusiast and professional DSLRs, drones and Videocams
- Compute: low latency external and removable SSDs
- Enterprise: faster and more reliable media to store image files, software features and configuration files for servers and routers

CFexpress\* 1.0 leverages the PCIE® Gen3 interface for higher performance based on a computing industry storage interface and protocol. Host manufacturers will be able to leverage their experience and investment in the NVM Express® storage protocol and media manufacturers will be able to leverage high volume solid state disk (SSD) controller technology to also serve CFexpress\* applications.

Professional video features are growing more powerful, with 4K video enjoying widespread use and 8K video already gaining adoption in high-end production environments. Ultra-High Definition TV production environments need more advanced digital formats, such as RAW 4K @ 60 frames per second, which requires reliable and sustainable performance of 700MB/sec and higher. In addition, next generation video applications, such as 8K and even professional 360/VR productions, produce video with incredibly high throughput that exceed legacy CFA cards' data recording of ~600MB/sec, and can benefit from such new spec which supports up to 2GB/sec.

Desktops and laptops are shifting to SSDs and enabling exceptional boot, application launch and seek times on local drives. CFexpress\* 1.0 cards allow consumers to increase their computers capacity without compromising performance or utility. The PCIE® interface throughput and NVM Express® efficiency will provide users with the same storage experience such as internal SSD, while the CFexpress\* 1.0 size and package attributes enable users to easily install or remove added capacity.

Servers and routers are scaling at a faster rate thanks to mature cloud infrastructure and myriad of competitive cloud based software services. Servers and routers architects are looking for a reliable and fast removable storage device which can maintain image files, certain software features and configuration files in cloud infrastructure. CFexpress\* 1.0 with low latency stack and native NVM Express® SMART commands improve both performance, reliability and monitoring compared to any other small size removable media.

Key features:

- Interface: PCIE® Gen3, up to 2 lanes (2GB/sec)
- Stack: NVM EXPRESS® 1.2, allows parallel access and reduced I/O overhead

- Size: 38.5 mm × 29.8 mm × 3.8 mm (same as XQD®); provide smaller enclosed package compared to other popular SSD form factors, with already established connectors (XQD®) market
- Durability: media is tested for 12,000 insertion / extraction cycles to provide reliable solution for removable and serviceable applications

CFA continues to execute on its vision to provide multiple form factors and address the needs of various market segments with a unified physical interface and storage protocol. A small and effective 2 lanes design was the initial focus but going forward the objective is to scale the specification up to 8 lanes and provides a throughput range of up to 8GB/sec with PCIE® Gen3.

Mr. Tsutomu Ando of Canon and the CFA co-chairman of the board said; “As the co-chairman of the CompactFlash Association I am excited to introduce CFexpress\* 1.0, continuing our tradition of performance leadership in removable storage applications. The higher performance provided by CFexpress\* 1.0 will further increase the capabilities and value for photographers, videographers, and cinematographers. I am very pleased and proud with the CFA commitment to enable the future of content creation and address the requirements of next generation high resolution and multi sensor cameras”

“The CFexpress\* 1.0 will enable many hardware manufacturers to leverage the performance benefits of the well-established PCIE® and NVM Express® eco-system, allowing for many years of higher performance and backward compatible products.” said Mr. Koichiro Kawamura of Nikon, co-chairman of the board, CFA.

CFA has recently added several new members interested in CFA's next generation and higher performance standards. CFA invites host and media companies interested in supporting the new CFA specifications to also join CFA as members. Membership in the CompactFlash Association enables participation in CFA work groups and access to draft specifications before they are approved and available for purchase by non-members. The new CFexpress\* 1.0 is available for members only.

More information can be found at <http://www.compactflash.org>.

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