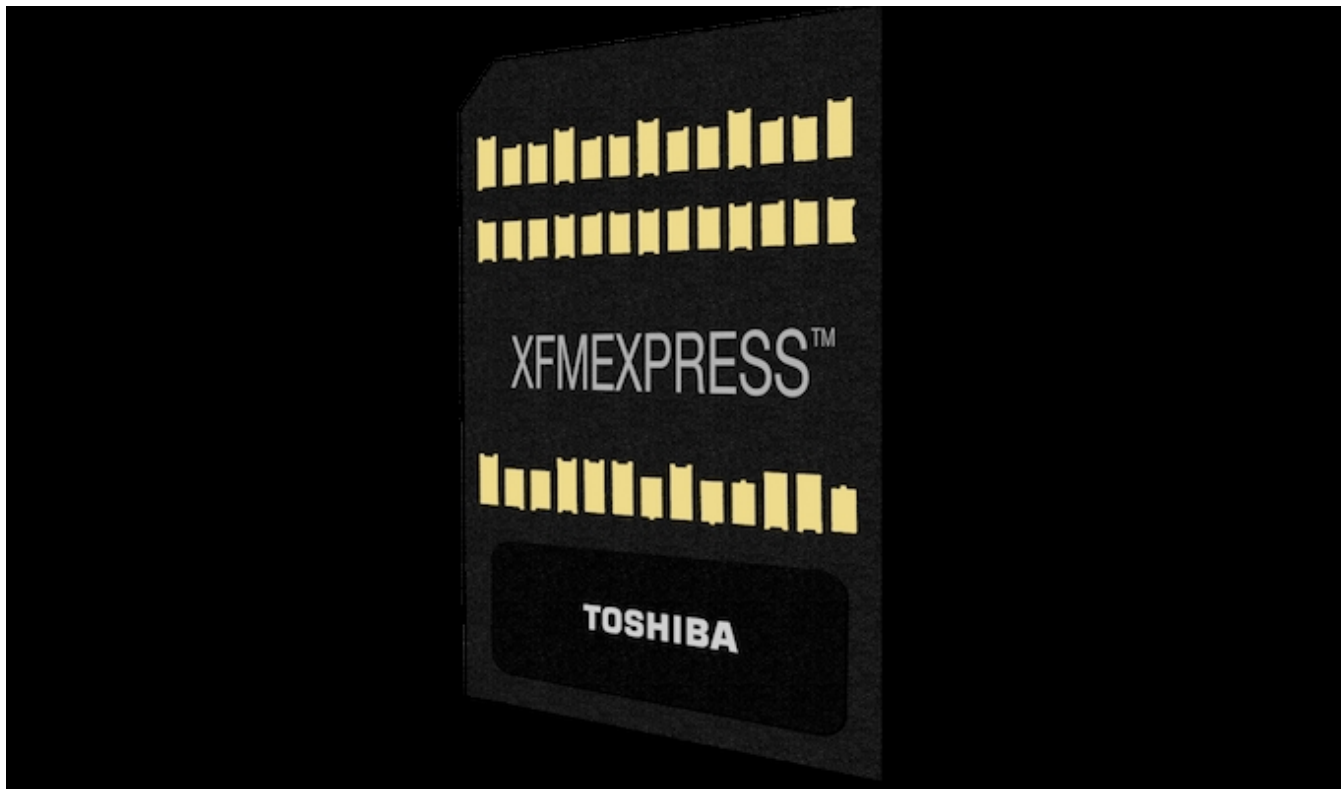


## Toshiba Debuts Tiny NVMe SSD Form Factor

Written by Marco Attard  
07 August 2019

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Toshiba takes to the 2019 Flash Memory Summit to reveal XFMEXPRESS-- a technology for removable PCIe attached NVMe storage devices in form factor smaller than 22 x 30mm M.2 cards.



The XFMEXPRESS card measures 18 x 14 x 1.4mm, making it just slightly larger and thicker than a microSD card. It mounts into a latching socket making for a 22.2 x 17.75 x 2.2mm footprint. In comparison, standard BGA SSDs are 11.5 x 13mm with a PCIe x2 interface or 16.20mm with a PCIe x4 interface. The result, Toshiba says, is a removable storage format for devices making use of soldered BGA SSDs or eMMC and UFS modules, allowing for both aftermarket upgrades or even smaller embedded devices.

Speaking of upgradability, the XFMEXPRESS is not designed to be externally-accessible-- instead, swapping out such an SSD requires opening the device in question. That said, the XFMEXPRESS socket and retention mechanism is tool-less, making such upgrades fairly easy (at least compared to M.2 SSDs).

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The company adds the technology is efficient as well as small. It implements a PCIe 3.0 NVMe 1.3 interface with 4 lanes (4L), allowing for theoretical bandwidth of up to 4GB/s in each direction, and up to 8GB/s in each direction for next-generation use cases. The design is also scalable to eventual PCIe 4.0 capable, and Toshiba claims it will be able to handle future as well as current 3D flash memory sizes.

“Innovation like this is only made possible by redefining storage technology itself,” Toshiba says. “From the PCB design to the connector, no other solution comes close to the combined size, speed, and serviceability of XFMEXPRESS technology. Toshiba Memory is excited to introduce this revolutionary new form factor to the market and enhance next-generation applications.”

The XFMEXPRESS solution is currently on show at the Flash Memory Summit.

Go [Toshiba XFMEXPRESS Storage](#)