XFMEXPRESS™, A New Replaceable SSD Form Factor

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A Reminder Reveal

The XFMEXPRESS™ device form factor has:

- Surface area of 14 mm x 18 mm
- Thickness of 1.4 mm

PCIe® Lanes 0,1

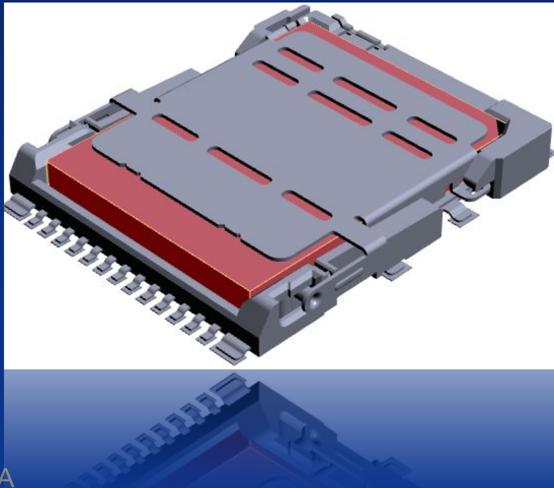
PCIe® Lanes 2, 3

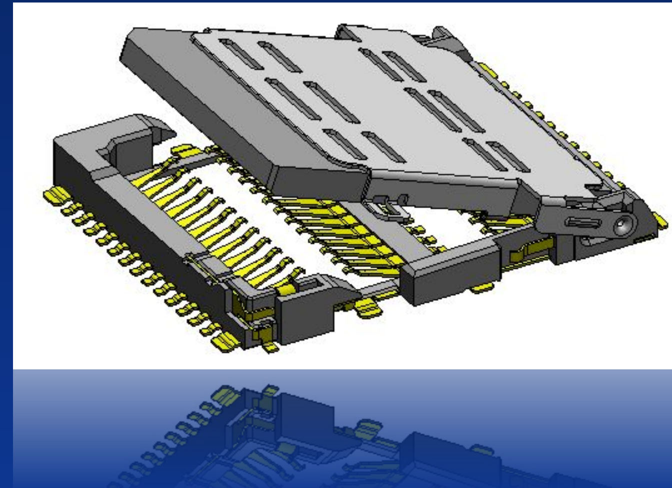
Power & PCIe® Sideband Signals

The Other Half

The first XFMEXPRESS™ connector has:

- Surface area of 17.8 mm ×22.2 mm
- Thickness of 2.2 mm





Why one more form factor?

There are the compromises of current SSD client products for ultra-mobile and embedded applications:

Large footprint and height limitation (e.g., M.2 2230),

vs.

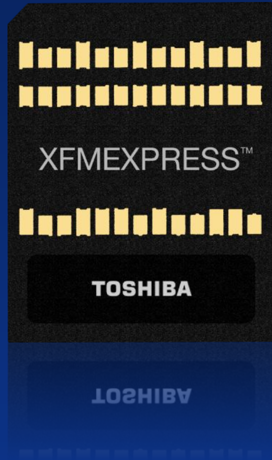
Not very flexible or serviceable (e.g., BGA 1620)

What does XFMEXPRESS™ offer?

XFMEXPRESS™ offers the combination of:

- Serviceability
- A no-compromise balance between a small form factor and support of SSD-class components (e.g., current and future 3D flash)
- Real I/F scalability and the thermal interface to support it
- SSD-class capacity & performance

Designed for Ultra-Mobile & Embedded Use Cases



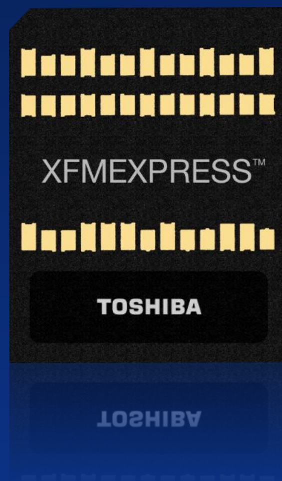
- XFMEXPRESS™ is a new memory device form factor developed by Toshiba Memory as a joint effort between SSD and Memory teams within Toshiba Memory
- No-compromise embedded & removable NVMe™ storage device
- Optimized mounting volume for host designers

Designed for Ultra Mobile

PCIe®/NVMe™ interfaces build today's mainstream client SSD

- PCIe® 3.0 Specification
  - x2 and x4 Lane
  - Gen 3, 8 GT/s
  - Design goal for Gen 4, 16 GT/s
- NVMe™ 1.3 Specification

Capacity and Performance



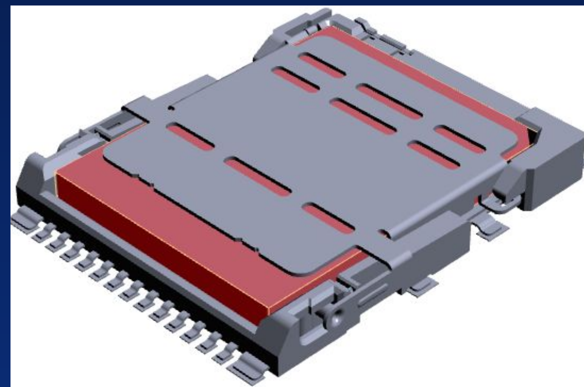
- Terabyte capacity capable
- Theoretical speeds of up to 4 GB/s on x4 lanes (PCIe® Gen 3.0) and up to 8 GB/s on x4 lanes (PCIe® Gen 4.0)
- Support for up to 5 watts with ‘TIM’ thermal treatments

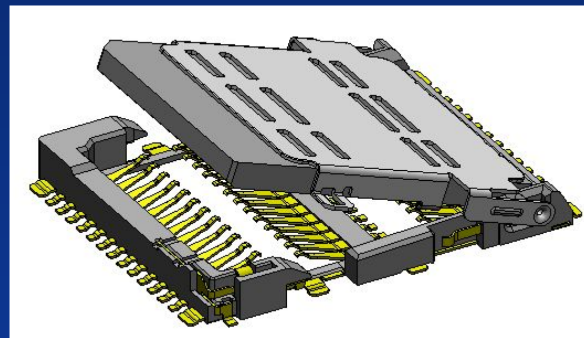
Designed for Ultra-Mobile

A new choice for embedded memory & removable storage/memory devices

A connector designed for:

- Easy replacement
- Minimal real-estate (3D)
- Heat transfer mechanisms optimizable for system target





Target Markets

Notebook PC
Thin & Light, 2-in-1

Automotive
EDR, Drive recorder

Automotive
IVI, ADAS

XFMEXPRESS™
TOSHIBA

Gaming
Console, VR HMD

Other…
Portable storage,
Security camera

XFMEXPRESS™ Standardization

Planning in process for an open standard

Please stay tuned...

THANK YOU!

Please visit Toshiba Memory
Booth #307

For more information:
https://business.toshiba-memory.com/en-jp/product/memory/xfmexpress.html