Flash Memory Summit

XFMEXPRESS™ Hinge Connector for XFMEXPRESS™ (XFME) Memory Device

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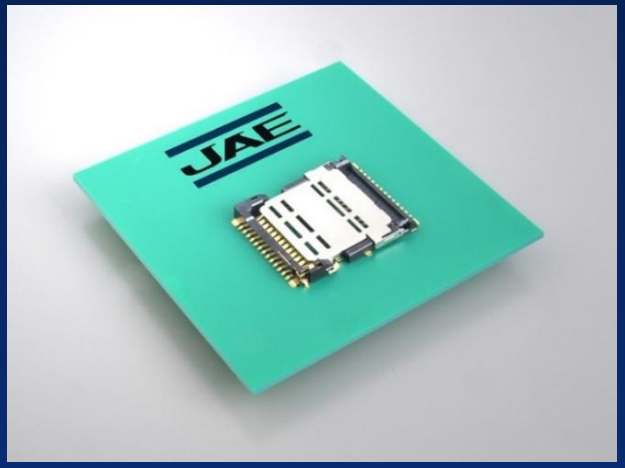
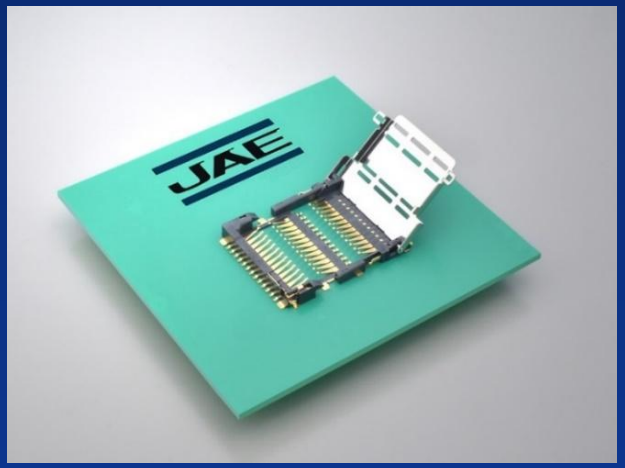
Flash Memory Summit

Features

- Hinge type connector
  → Operable in a small space
- Dimensions (mm): 17.8(W)×22.2(D)×2.2(H)
  → Low profile, small size
- Lock structure
  → Prevents cover from opening if device is dropped
- Additional heat dissipation structure
  → Many hold downs
- Supports PCIe® Gen4 (16GT/s)
  → Optimized contact shape

※ PCIe is a registered trademark of PCI-SIG





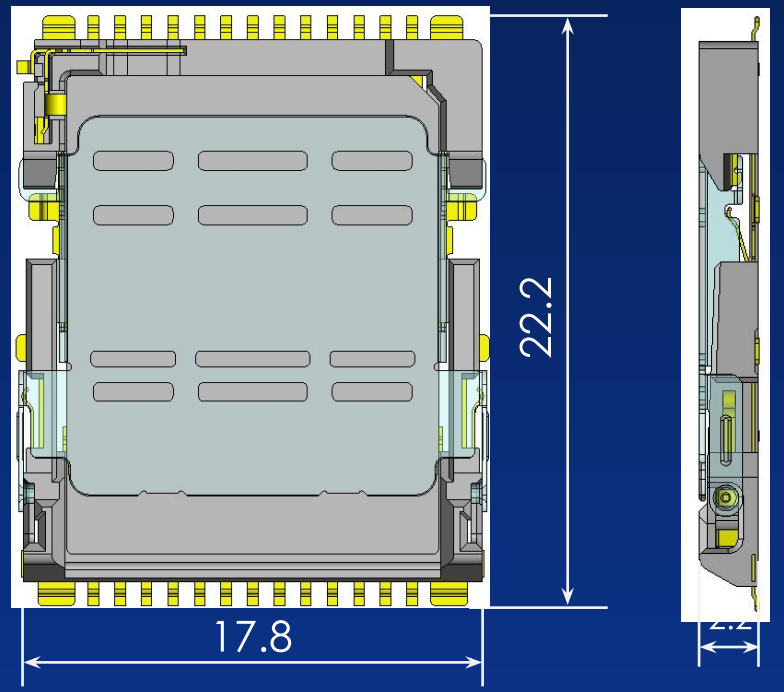
Specifications and Dimensions

Specifications

Contacts	39 contacts
Operating Temperature Range	-25～+85℃
Contact Resistance	100mΩ max
Durability	5,000 times
Insulation Resistance	100MΩ min
Voltage Proof	AC500 Vr.m.s. for 1 minute

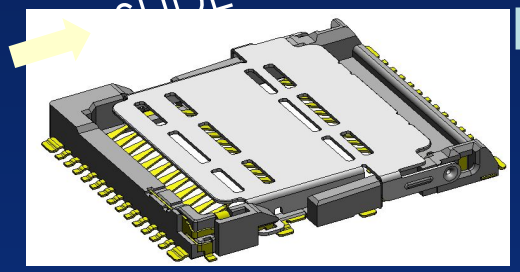
Dimensions

Unit : mm

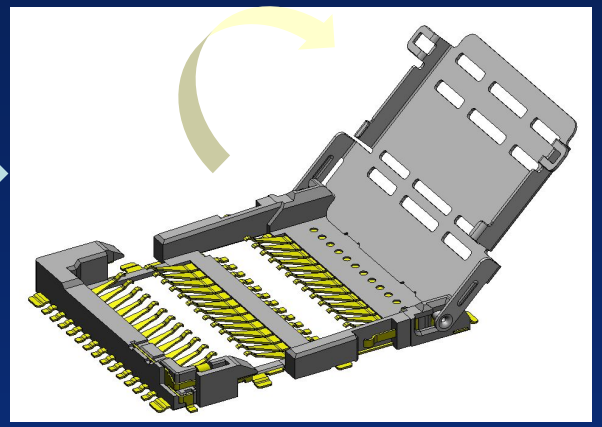


Connector Operation

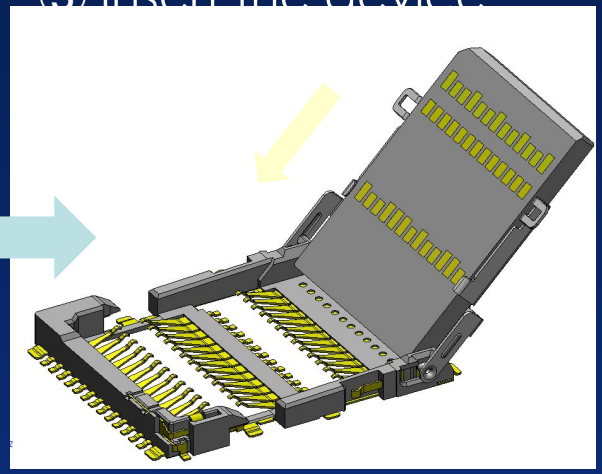
① Slide the cover to unlock



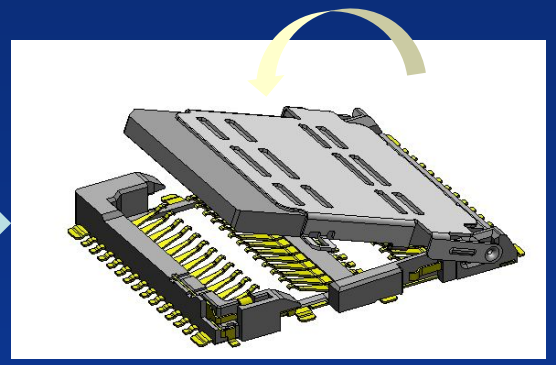
② Open the cover



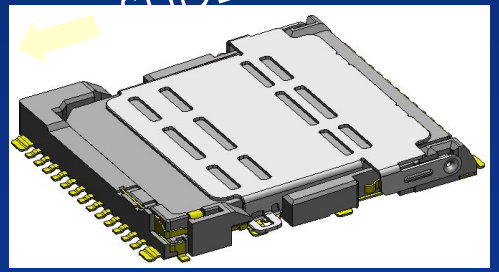
③ Insert the device



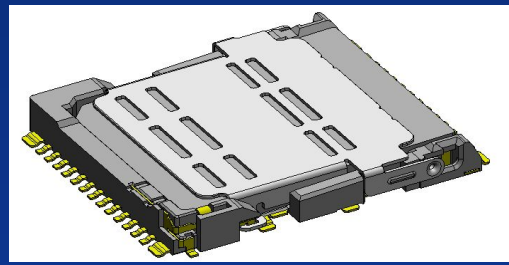
④ Close the cover



⑤ Slide cover to lock



⑥ Paired condition



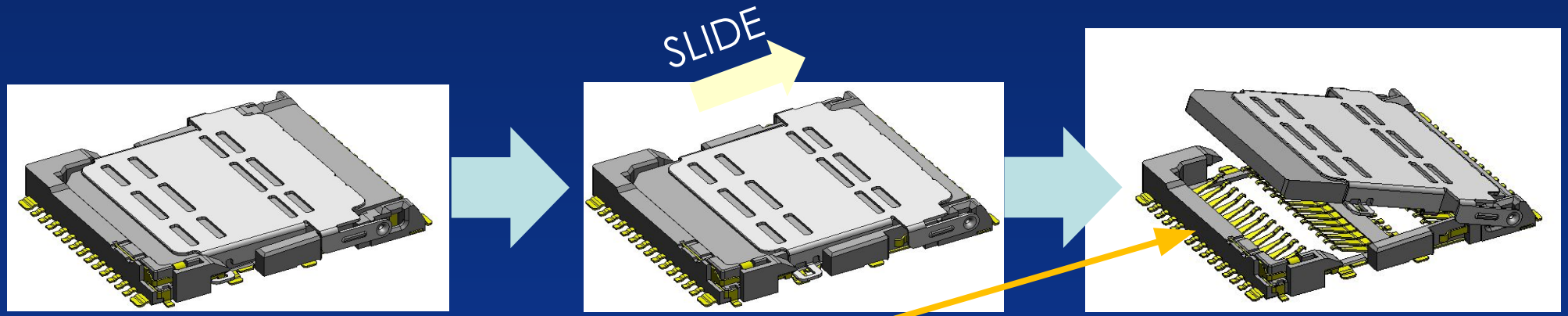
Feature 1: Easy Operation

- Hinge type connector is **operable in a small space**
- **Easier insertion and removal operation**

  ※ Toolless replacement is faster

Connector Operation

① Paired condition ② Slide the cover to lock ③ Open the cover

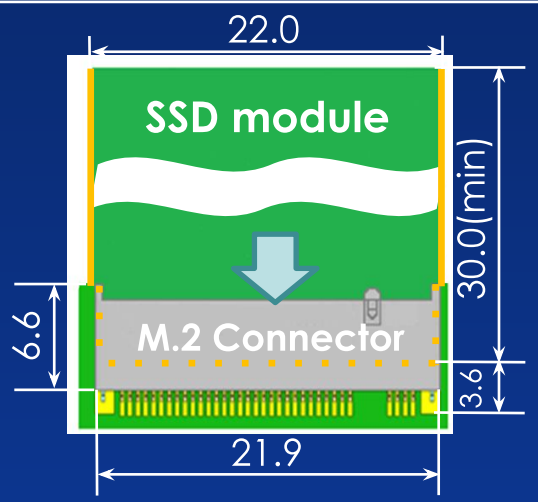
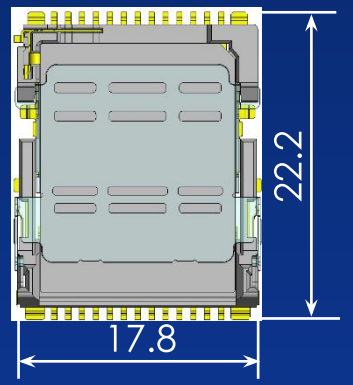


※Easy to remove device because the cover lifts up when opening

Feature 2: Small Size

- Small Mounting Area → **Allows for miniaturization**
- Comparison of internally mounted connector modules

Unit: mm

Type	SSD	XFME Memory Device
Device size	**22mm×30mm or 42mm** (M.2 2230 or 2242)	**14mm×18mm**
Occupied Area (including connector)	**22.0mm×33.6mm= 739mm²**	**17.8mm×22.2mm= 395mm²**
Image		

Feature 3: Lock and Repairability

- **Excellent lock structure**

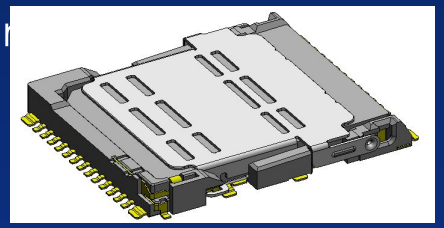
  → Hinge cover will not open if device is dropped

- **The cover can be replaced**

  →The damaged cover can be installed a new one

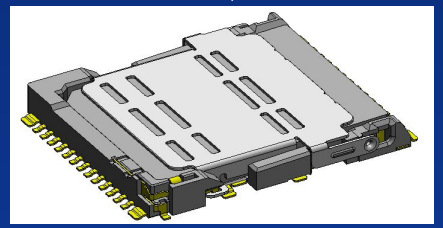
Lock Structure

Paired condition

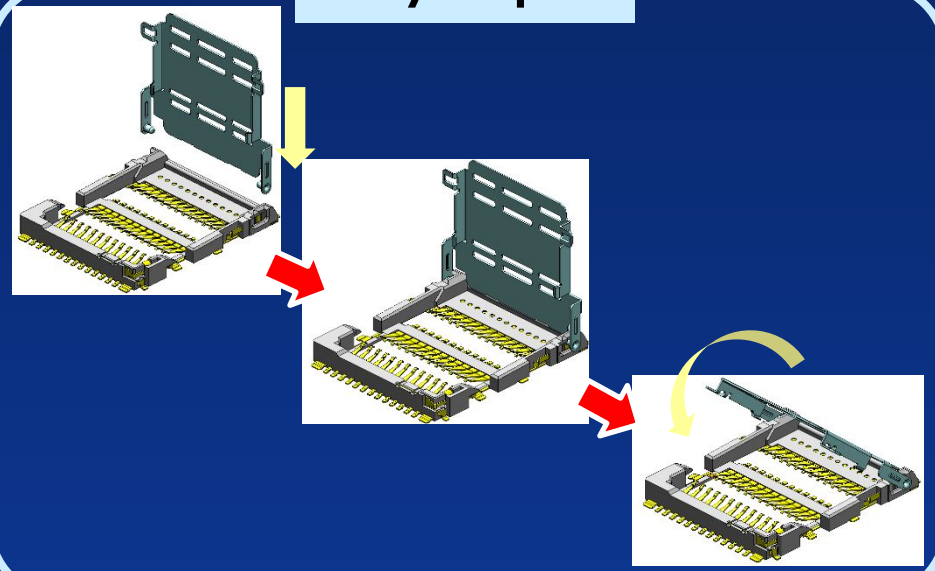


Drop connector

Cover does not



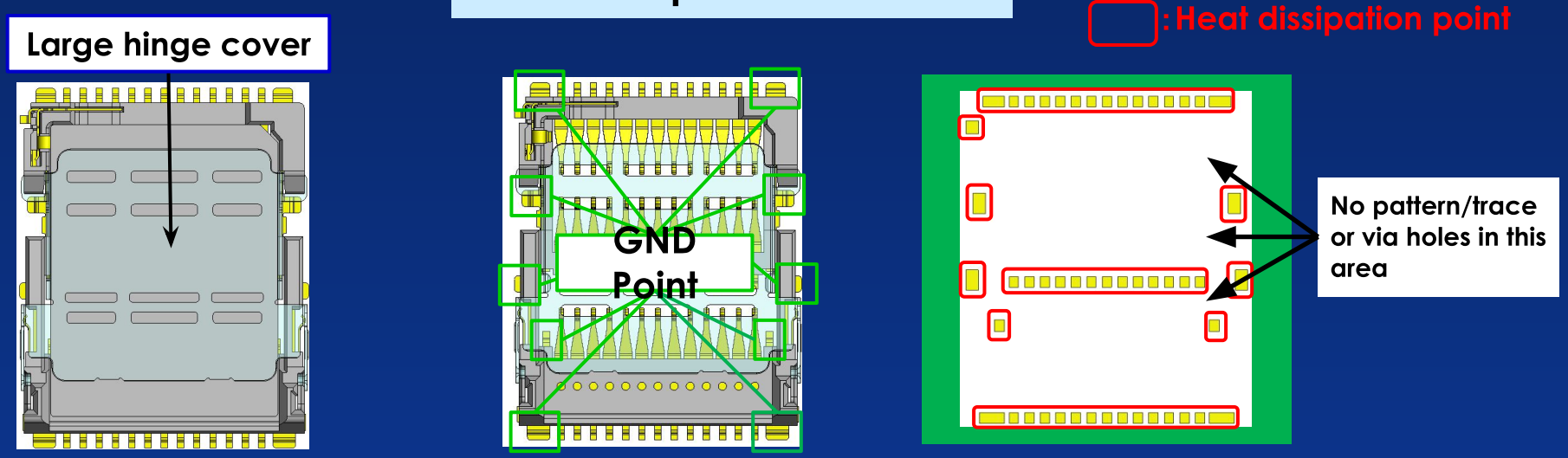
Easy Repair



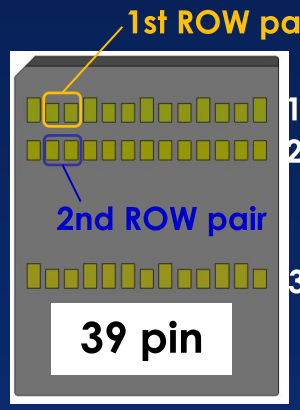
Feature 4: Heat Dissipation

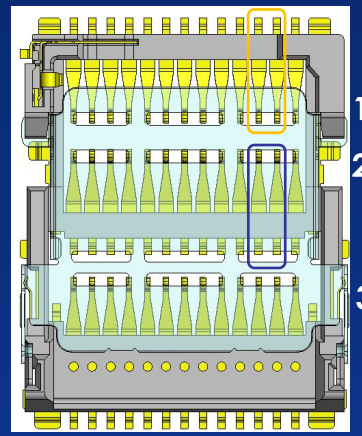
- **Connector hinge cover with large surface area**
  → Increased ground area for memory card and hinge cover
- Equipped with **10 hold-downs**
  → To dissipate heat from the connector to the PCB side

Heat Dissipation Structure

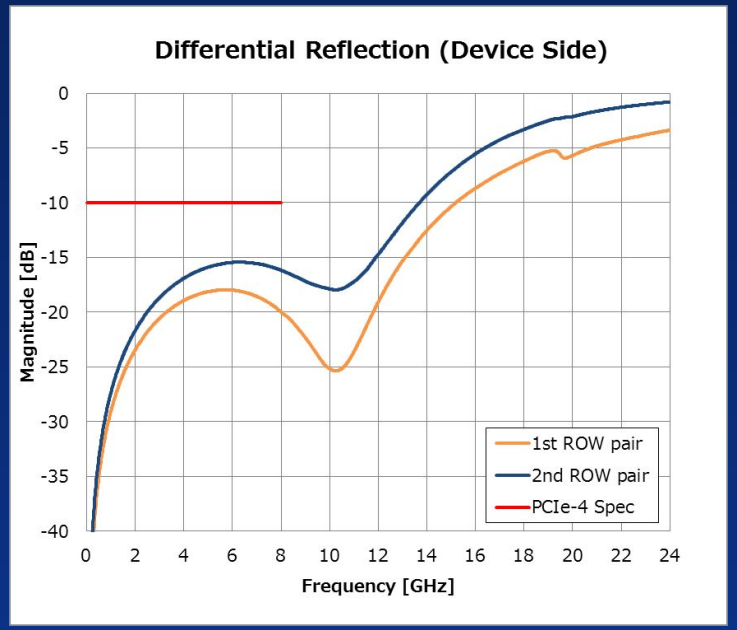


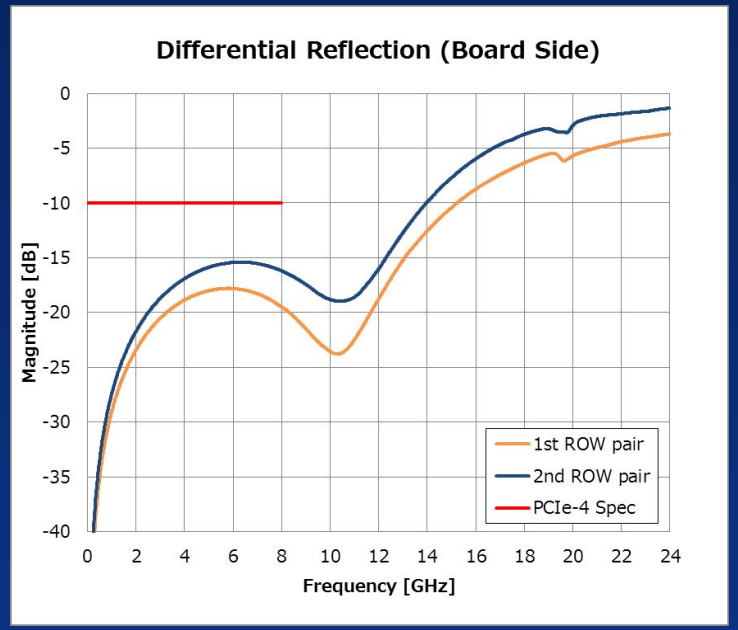
SI Simulation: Return Loss





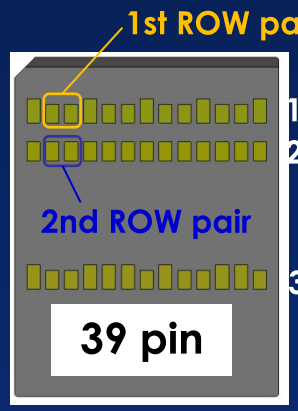
Solver: HFSS
Sweep range: 0-24GHz
Sweep step: 10MHz

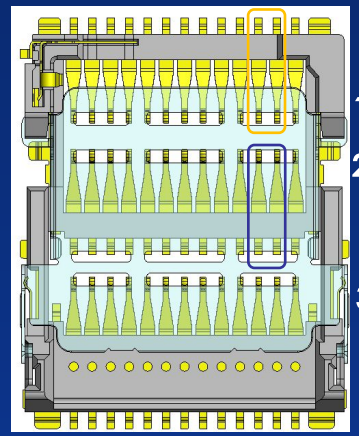




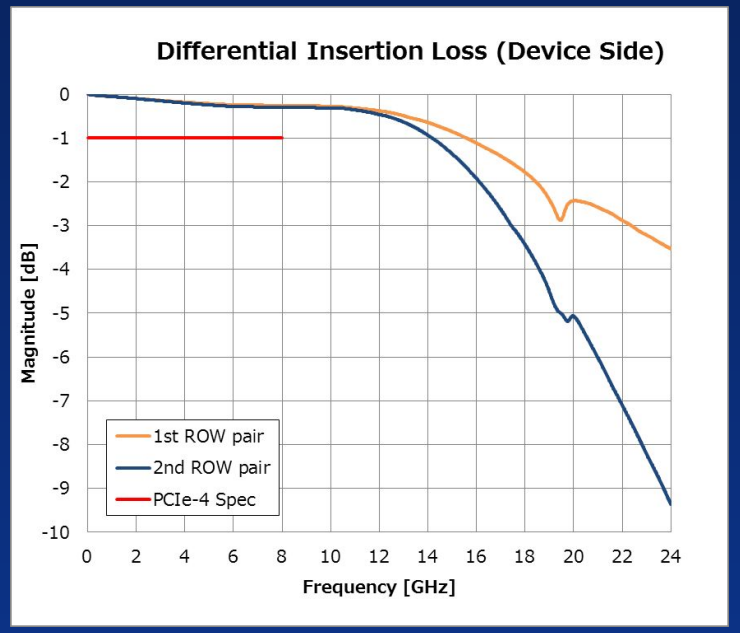
Simulation results meet the PCIe Gen4 Spec

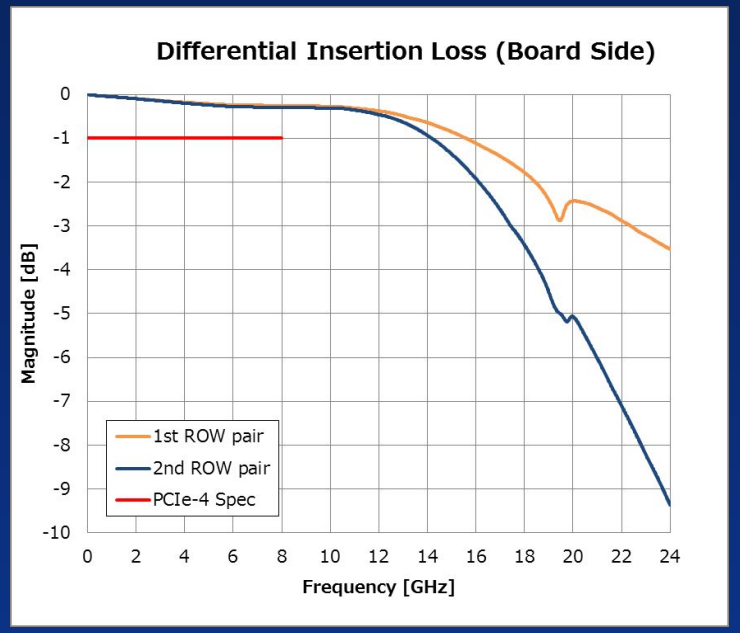
SI Simulation: Insertion Loss





Solver: HFSS
Sweep range: 0-24GHz
Sweep step: 10MHz





Simulation results meet the PCIe Gen4 Spec

SI Simulation: NEXT

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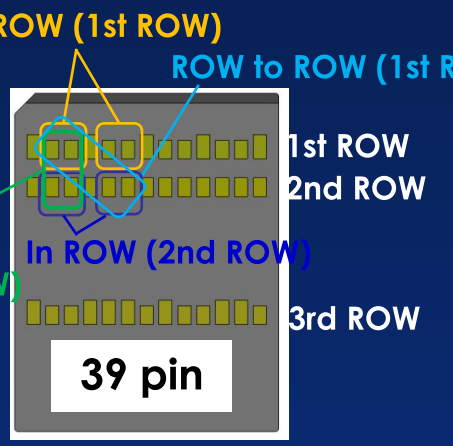
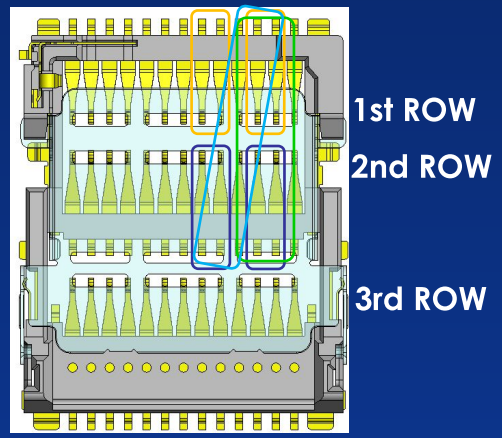
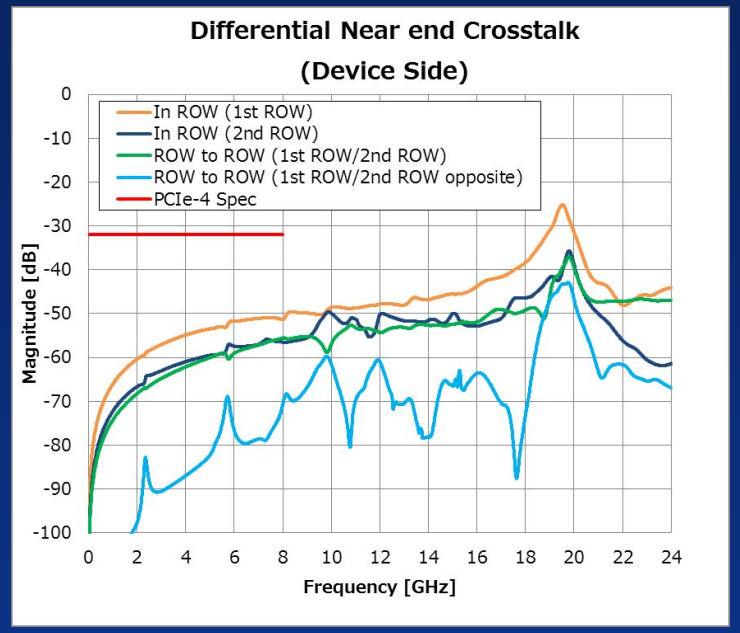
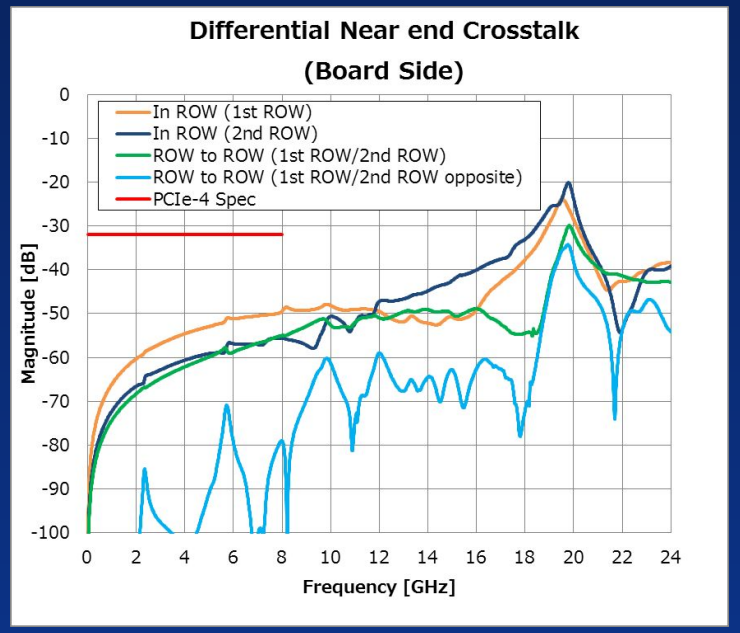




Solver: HFSS
Sweep range: 0-24GHz
Sweep step: 10MHz





Simulation results meet the PCIe Gen4 Spec

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THANK YOU!

Please visit Booth 307, Toshiba Memory