OPEN Compute Project®

SERVER

OCP NIC3.0 ACTIVITIES & NEXT-GEN UPDATES

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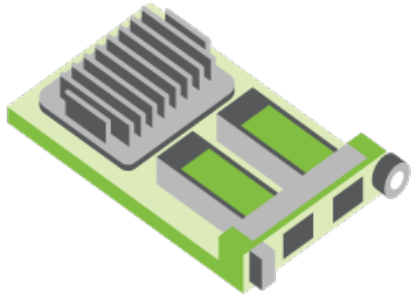


NIC3.0

Connect. Collaborate. Accelerate.

NIC Sub-group activities

TSFF Thermal Fixture

Taller Faceplate, Increased Cooling Solutions

- Re-Use of Existing Thermal Test Fixture. 3 Different components for Conversion to TSFF.
- Mechanical design files posted in wiki
- PCIe Gen5 Enabling

PCIe Gen 5.0 SI Fixture

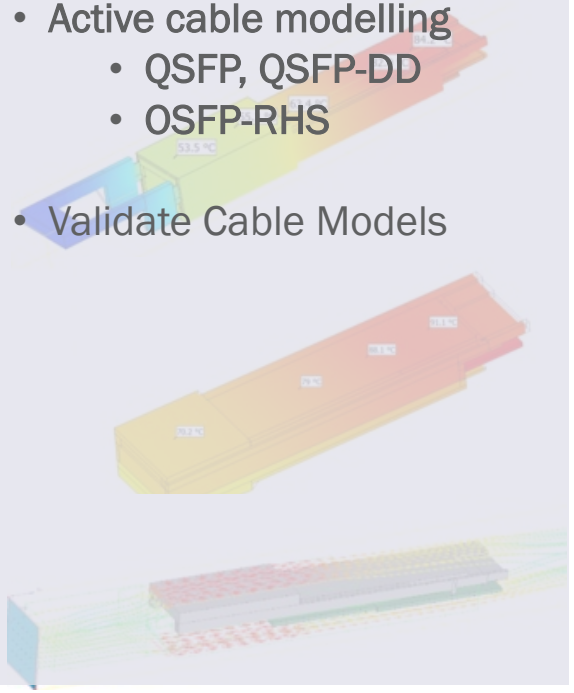
System & OCP NIC 3.0 Compatibility

- Compliance Load Board (CLB)
  - In Lab
- Compliance Base Board (CBB)
  - Design soon

Thermal Modelling

Common reference model

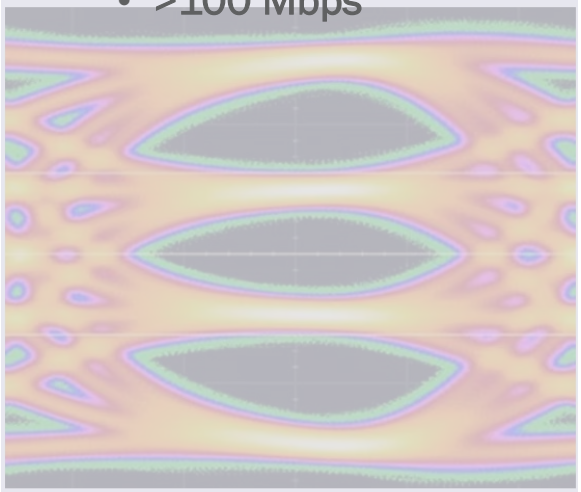
- Active cable modelling
  - QSFP, QSFP-DD
  - OSFP-RHS
- Validate Cable Models



Next-Gen

Speed Bump

- PCIe Gen6
- RMII based Transport (RBT)
  - >100 Mbps



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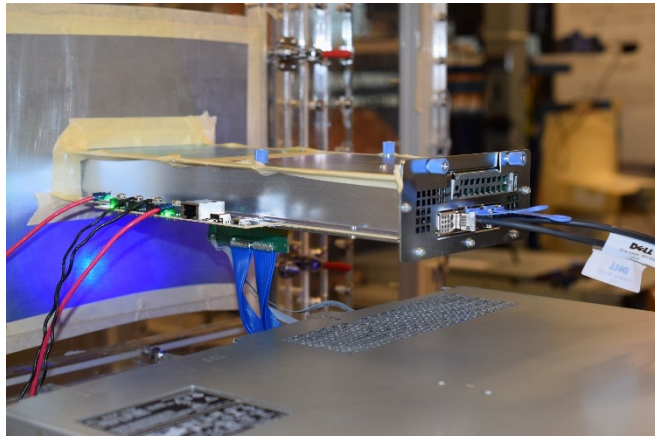
Damien

PCIe® 5.0 Thermal Test Fixture (TTF)

- The TTF was designed to support speeds up to PCIe® 5.0 32GT/s
  - Uses very low-loss material
- Cable assembly must be updated for 32GT/s signaling transmission
  - Working with two vendors to source
  - Lab experimentation required

OCP NIC 3.0 TTF in use



Example cable assembly from Samtec

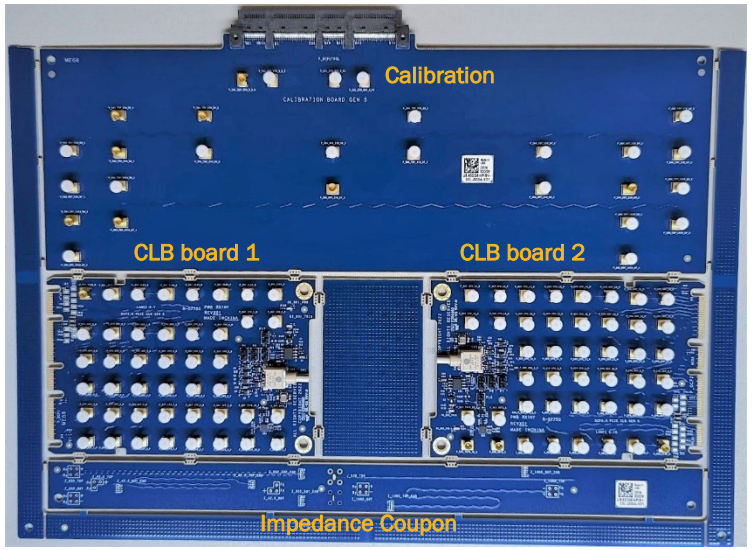
Jason

PCIe® 5.0 SI Test Fixtures

- CLB 5.0 32GT/s status:
  - Based on 4.0 design
  - Gerbered in January; PCB arrived March
  - Assembled protos readied March 30
  - Testing underway

- CBB 5.0 32GT/s status:
  - Based on 4.0 design
  - Updates to align with PCI-SIG®
  - Routing starts once CLB verified

OCP NIC 3.0 SFF CLB 5.0 prototype



Jason

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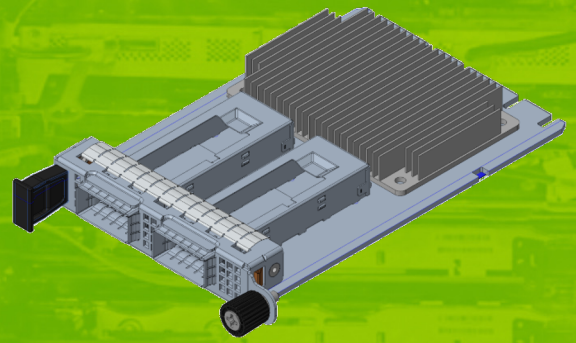

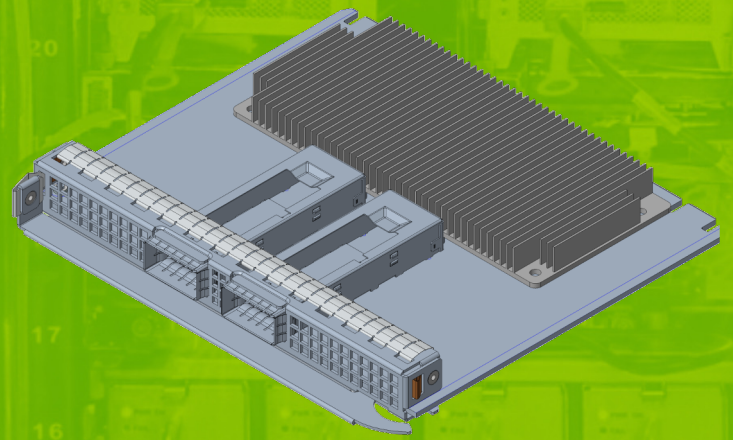

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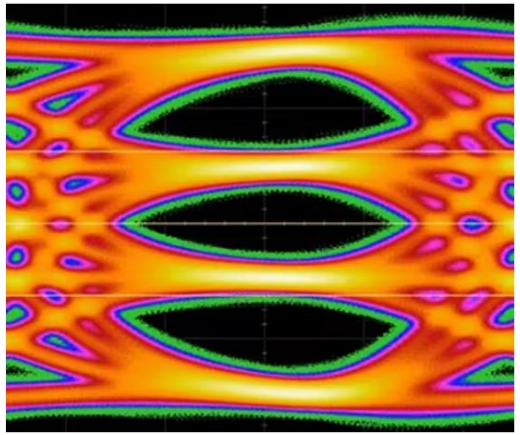
Next-Gen Speed Bump

Trending Speed Upgrade with backward compatibility



RMII

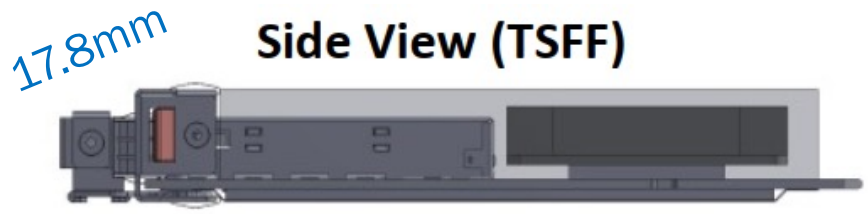
SFF
LFF
TSFF

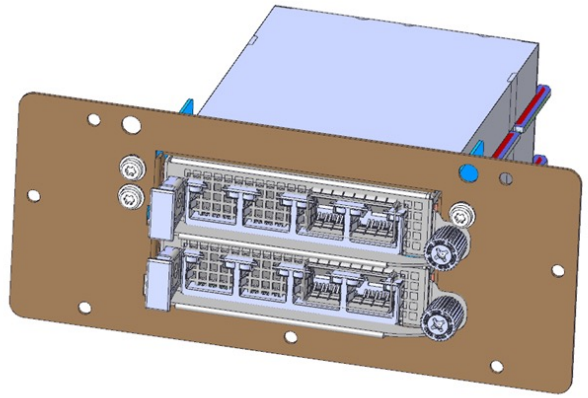
Support PCIe Gen6 thru SFF-TA-1002	>100Mbps OOB still under investigation	Form factor trending NO CHANGE

Insertion loss & crosstalk of 64G PAM4 yet to be in spec

Backward compatibility is the priority

Specification & Test Fixture for Tall Small Form Factor





Released Specification Docs

Name	Format	Version	Date	Contributor	Link
OCP NIC **3.0** Specification (with change bar)	PDF	**1v20** Released	09/13/2021	OCP NIC sub-group	Download
OCP NIC **3.0** Specification (without change bar)	PDF	**1v20** Released	09/13/2021	OCP NIC sub-group	Download

Fixtures Design Files

Name	Format	Version	Date	Contributor	Link
OCP NIC 3.0 PCIe® Gen3 CLB/CBB Fixtures Collateral (Schematics, Layout & BOM)	ZIP	N/A	6/13/2019	Dell-EMC	Download
OCP NIC 3.0 PCIe® Gen4 CLB/CBB Fixtures Collateral (Schematics, Layout & BOM)	ZIP	N/A	6/13/2019	Dell-EMC	Download
OCP NIC 3.0 Shock & Vibe Fixtures Collateral (Mechanical drawings)	ZIP	N/A	3/29/2019	Intel	Download
OCP NIC 3.0 SFF Thermal Test Fixtures Collateral (Mechanical)	ZIP	N/A	6/4/2018	Dell-EMC	Download
OCP NIC 3.0 TSFF Thermal Test Fixtures Collateral (Mechanical)	STP/ZIP	N/A	10/20/2021	Dell-EMC	Download
OCP NIC 3.0 Thermal Test Fixtures Collateral (Schematic, Layout)	ZIP	N/A	2/11/2019	Dell-EMC	Download

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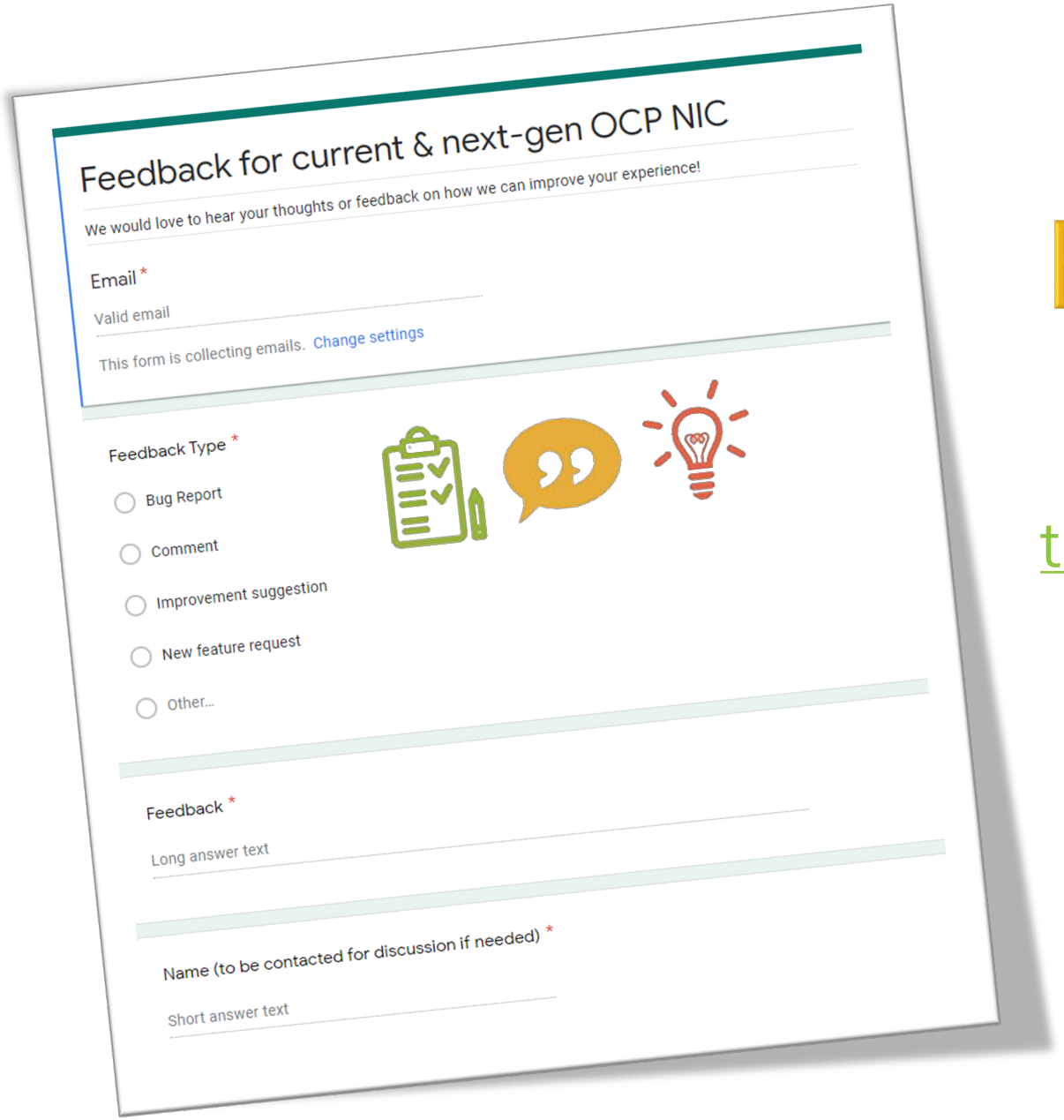

Feedback Form

tinyurl.com/feedback2ocpnic

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Call to action

Join discussion

opencompute.org/projects/project-and-ic-meetings-calendar

Feedbacks

tinyurl.com/**feedback2ocpnic**

Wiki

opencompute.org/wiki/Server/Mezz

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Questions & Answers

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