CAUI-4 options

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System vendor problem

Location of System Chip tends to be ‘driven’ by competing system and module interface requirements!
100G electrical interface system requirements

- System chip (25G or 10G I/O)
  - 8in./15dB
  - OIF CEI-SR/CAUI

- 10:4 or 4:4 (10G or 25G I/O)
  - 4in./7dB

- Card Cage (25G I/O)
  - QSFP or CFP4

- 35dB chip to chip for copper

- 5m twinax
  - Copper cable (20dB) or Optics module

- 10 dB chip to chip for optics

- System chip (25G I/O)
  - 8/12in.-15/19dB

- Card Cage (25G I/O)
  - QSFP or CFP4

- Optics only

- QSFP or CFP4
Issues and possible solutions

• Need common port for copper and optics
  – Use bj copper port host budget for CAUI4
  – Module SERDES power needs to be minimized
  – OIF CEI-28G-VSR solves the issue

• Need longer reaches for lower cost/power longer term solutions
  – Define an asymmetric link to maintain module compatibility and reduce power
    • Keep power down in module SERDES
    • LR macro in Host ASIC, VSR macro in module?

• Copper will not work in longer reach host ports
  – ?
Proposed CAUI4

System chip (25G or 10G I/O) -> 6in./10dB CAUI4 -> 10:4 or 4:4 (10G or 25G I/O) -> 4in./7dB CAUI4 -> Card Cage (25G I/O) -> QSFP or CFP4

10 dB chip to chip
Proposed CAUI4e

System chip (25G or 10G I/O)

8-12in./15-20dB

CAUI4e Chip-chip

10:4 or 4:4 (10G or 25G I/O)

VSR or LR SERDES  LR SERDES

Card Cage (25G I/O)

6in./12dB

CAUI4e Chip-module

VSR SERDES

QSFP or CFP4

Optics module

15dB chip to chip
Conclusion

• Have a nice day