

A Pathway to 224/448 Gbps Copper and Optical Connectivity in AI

2026 OCP Global Summit – Expo Hall Session

Matthew Burns | Director, Technical Marketing

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AI Infra Cabling – How far can we go?



- Evolving AI system topologies/architectures require more external cabling

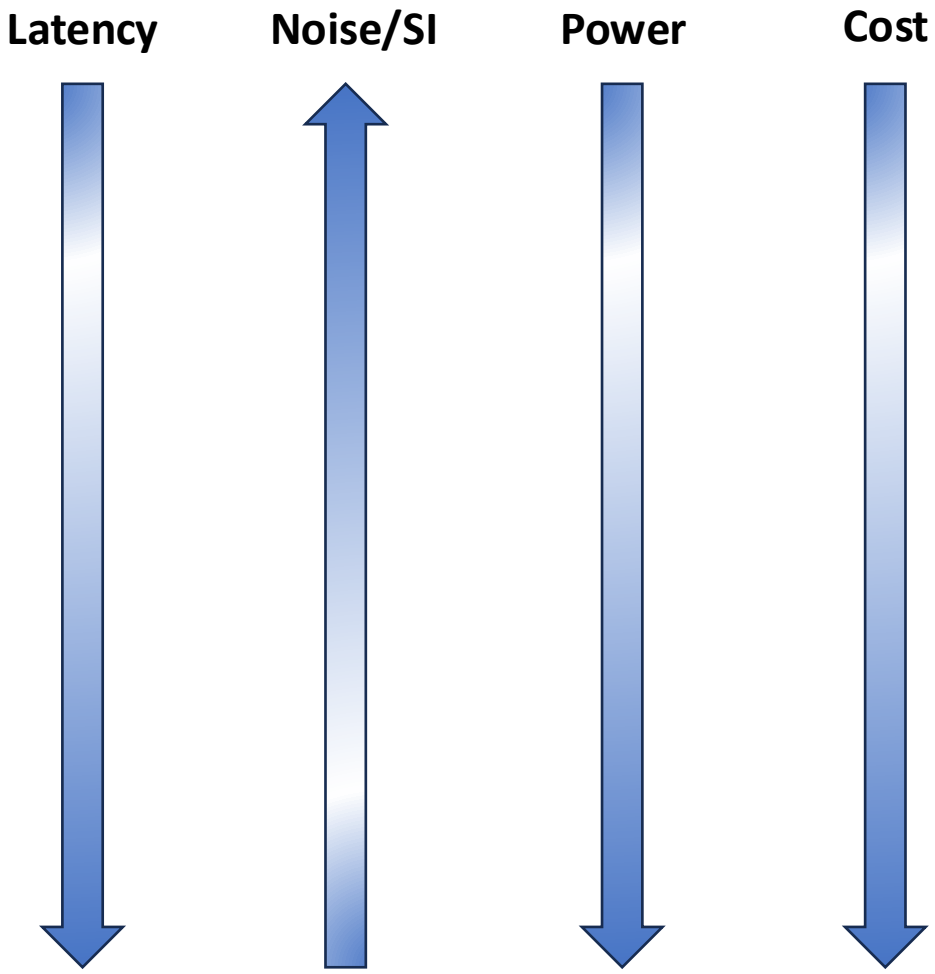
- Reach requirements vary
  - Within the rack ~2m
  - Adjacent racks ~3-5m
  - Rack-to-rack ~7m
  - Larger clustering ~10m+

- Interconnect options vary as well
  - Passive DACs
  - Powered ACCs
  - Re-timed AECs
  - LPOs
  - AOCs

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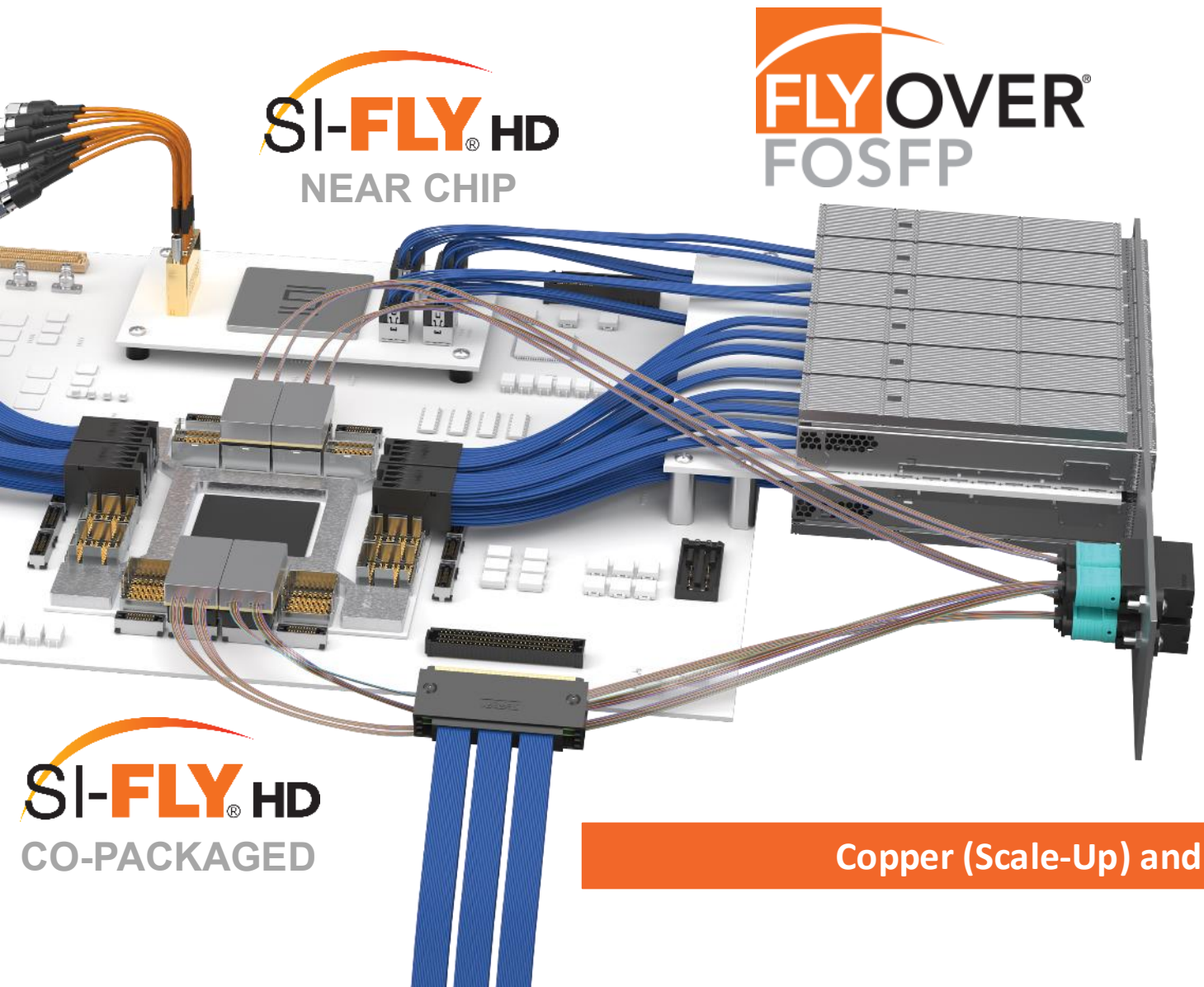
AI Infra Cabling Comparison

- Passive DACs ~2m
- Powered ACCs ~5m
- Retimed AECs ~7m
- LPOs ~50m
- AOCs ~100m+



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Product Portfolio



Si-Fly® HD Co-Packaged System

- Ultra-high I/O density with minimal beachfront
- Lowest loss signal transmission
- SMT reflow process on HDI substrate

Si-Fly® HD Near-Chip System

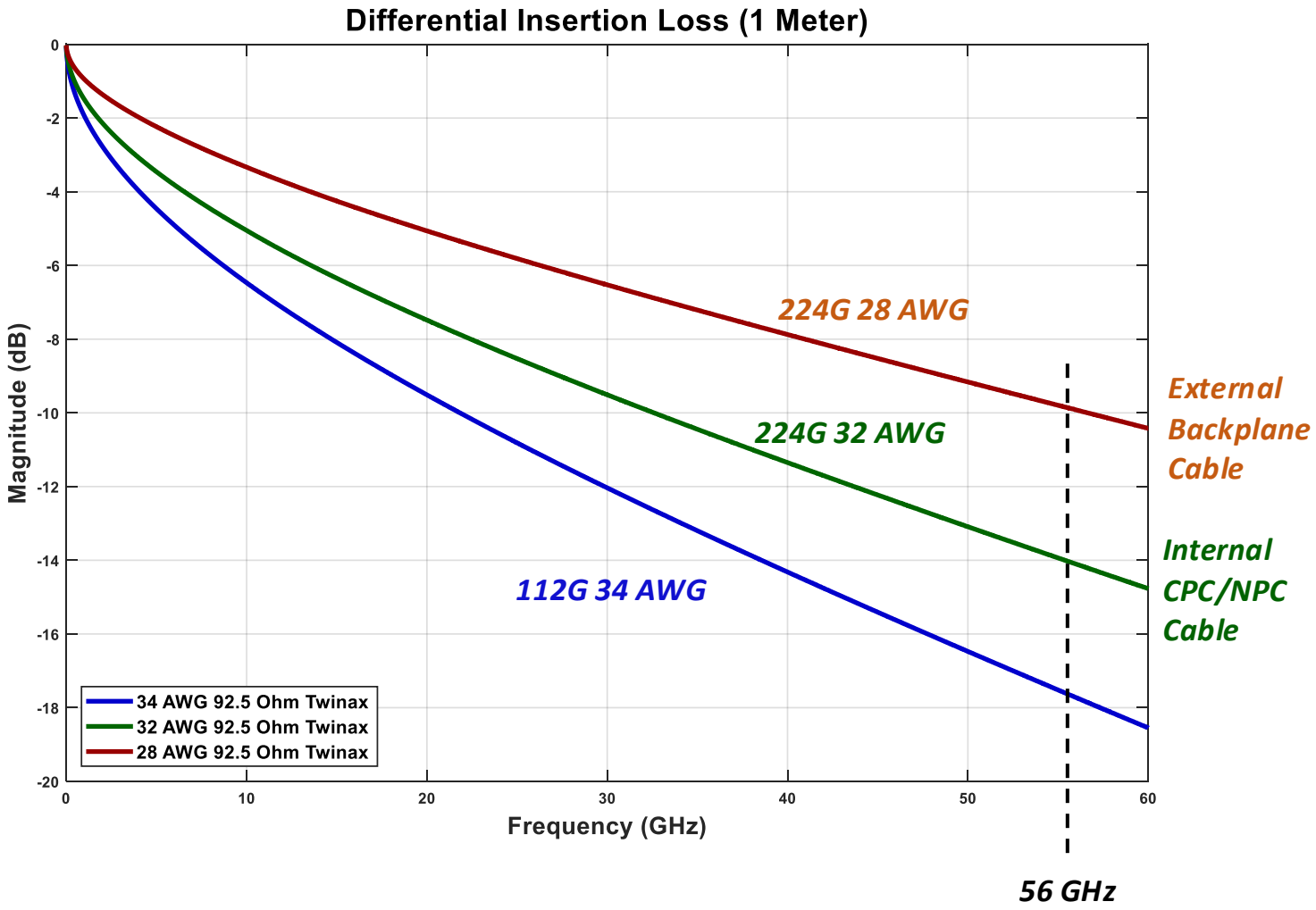
- ASIC-adjacent, high-density signal launch
- SMT reflow process on PCBs

Flyover® OSFP Cable System

Copper (Scale-Up) and Optics (Scale-Out) in a Single Connector

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Eye Speed® Twinax Cable Technology

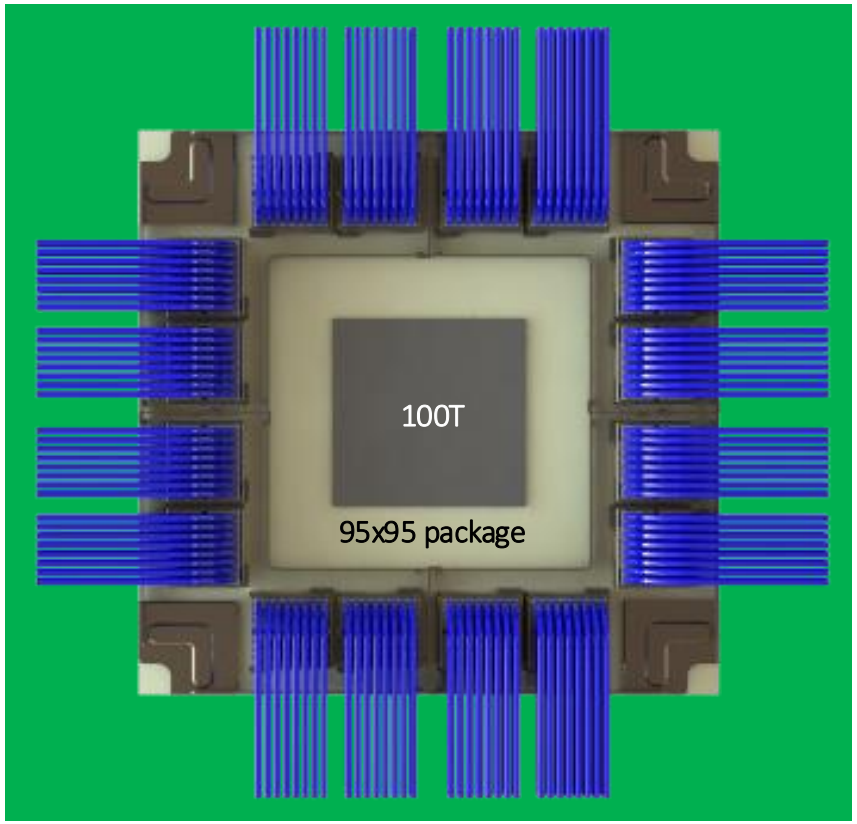


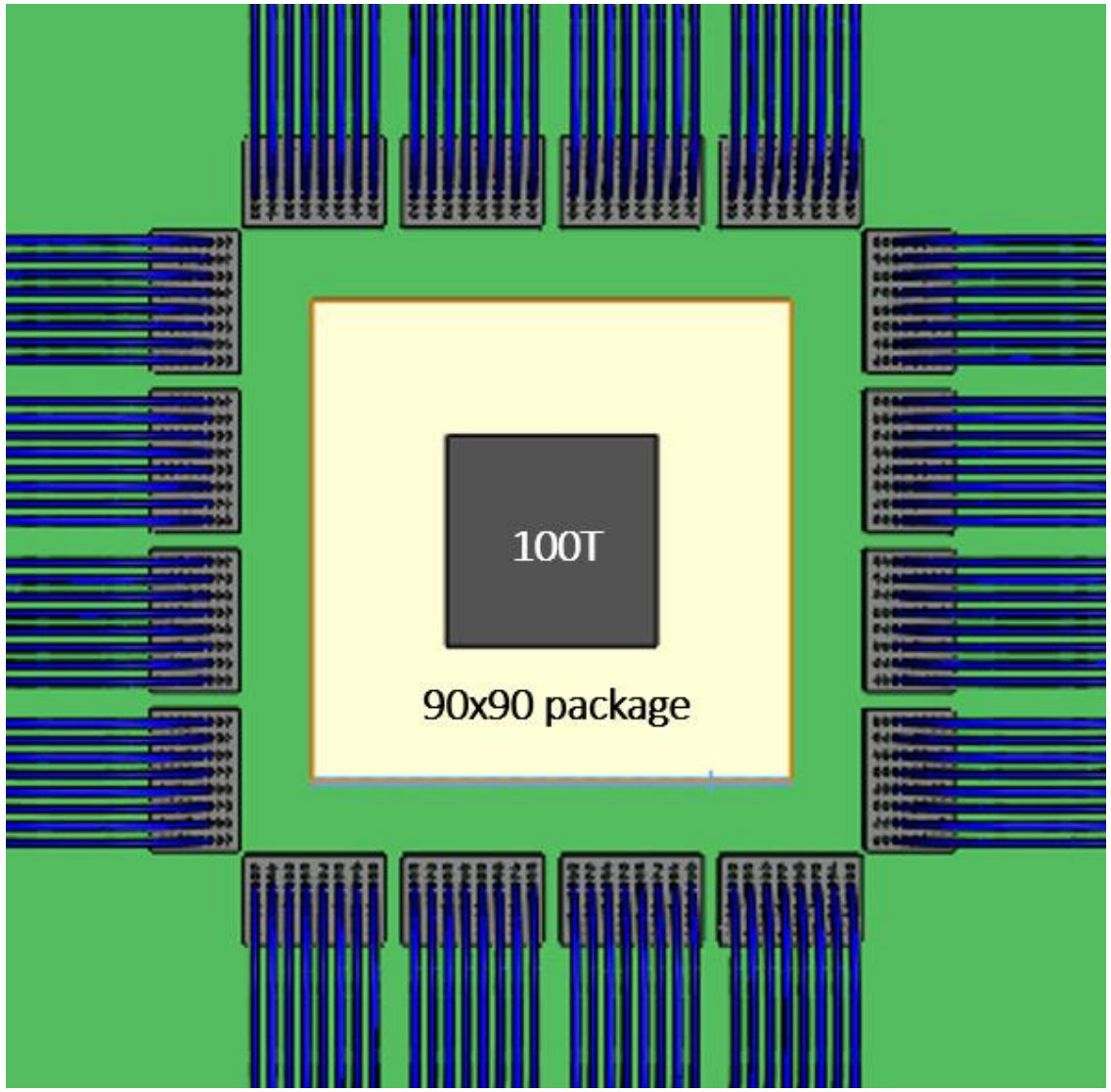


- Eliminates the performance limitations and inconsistencies of traditional twinax
- Hyper low skew: 1.75 ps/meter max
- Insertion Loss: 14.3 dB (32 AWG, 1 meter length at 56 GHz)
- Easy to route through systems
- Impedance: (92 Ω)
- Ideal for all high-performance applications up to 224+ Gbps PAM4
- Tight coupling between signal conductors

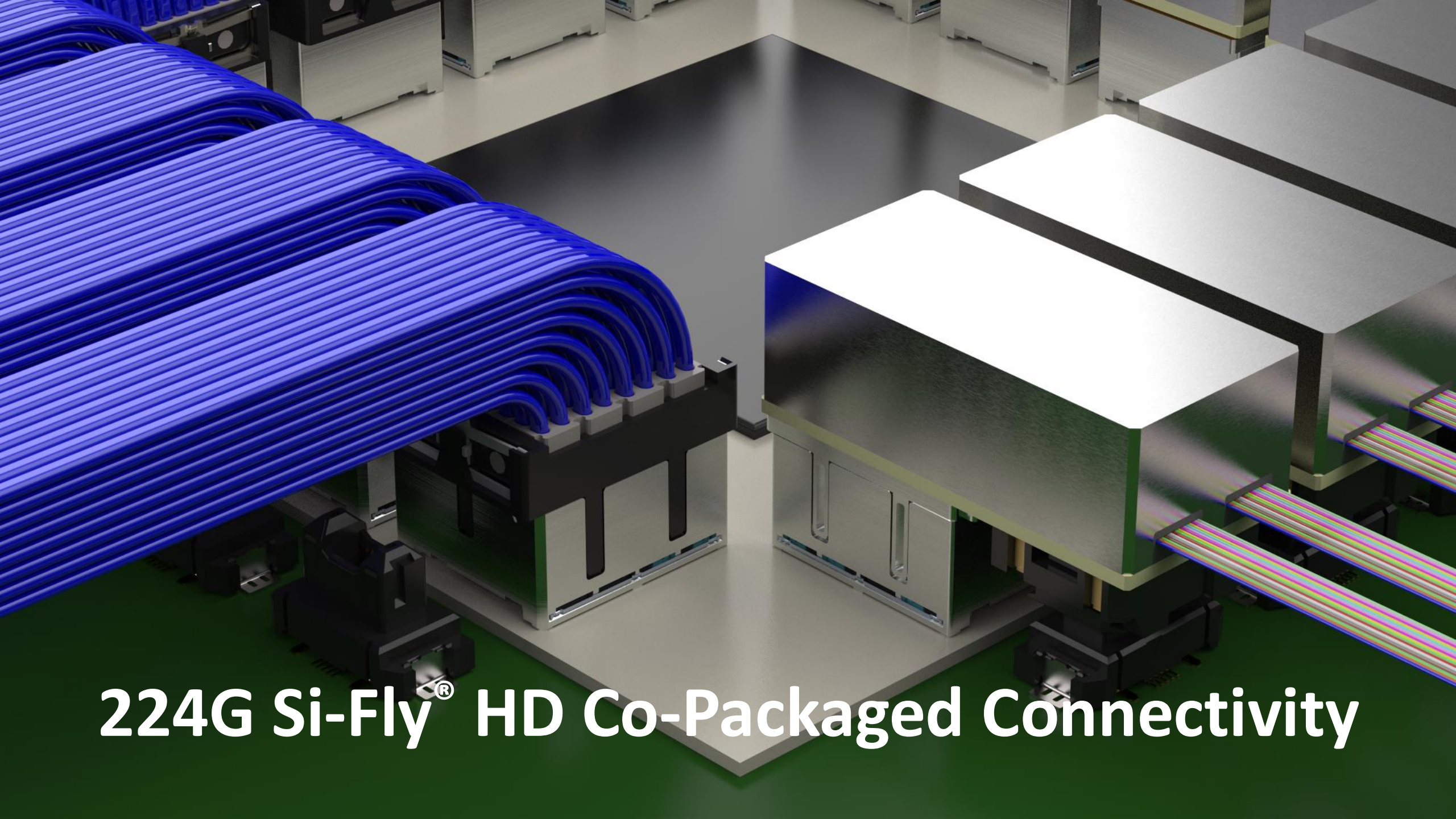
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Si-Fly® HD Co-Packaged vs Near Chip





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224G Si-Fly® HD Co-Packaged Connectivity

Open CPX MSA: Scale-Up & Scale-Out

OPEN CPX MSA

- Universal mixed-media pluggable interconnect
- 6.4T and 7.2T pluggable interfaces
- Supports CPO/CPC and NPO/NPC options
- Uses existing electrical, optical and control plane standards
- No compression hardware
- Supply chain resilience with multiple sources

Founding Members

ciena COHERENT MARVELL

molex samtec TERAHOP

Contributor Members

ati Accton ACON OPTICS aoPT ALPHA Networks Amphenol ANKETI Technology AOI AsteraLabs. AVICENA

BizLink ByteDance ColorChip CREDO eoptolink FIT Genuine optics intel KEYSIGHT

LESSENGERS LIGENT LIGHTMATTER Linktel LINTES LOTES LUMENTUM LYNTERA MaxLinear Micas NETWORKS

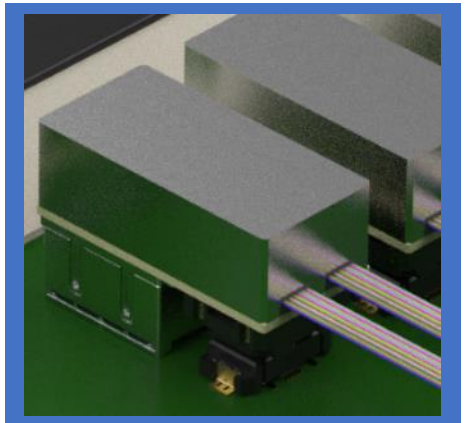
MIXX TECHNOLOGIES multiLane muRata nexthop ai NEXUSTEST NOKIA NVISION PhotonicXAI Qualcomm Dragonfly Ruijie

RVI scivax SiLUXTEK SiPhi TE SP SOURCE PHOTONICS TFC upscale VIAVI YAMAICHI ELECTRONICS

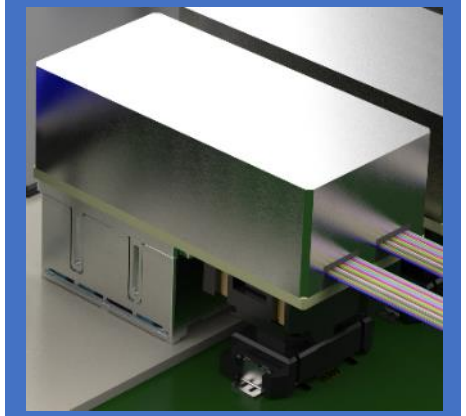
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Open CPX MSA Type-1 Socket/Module

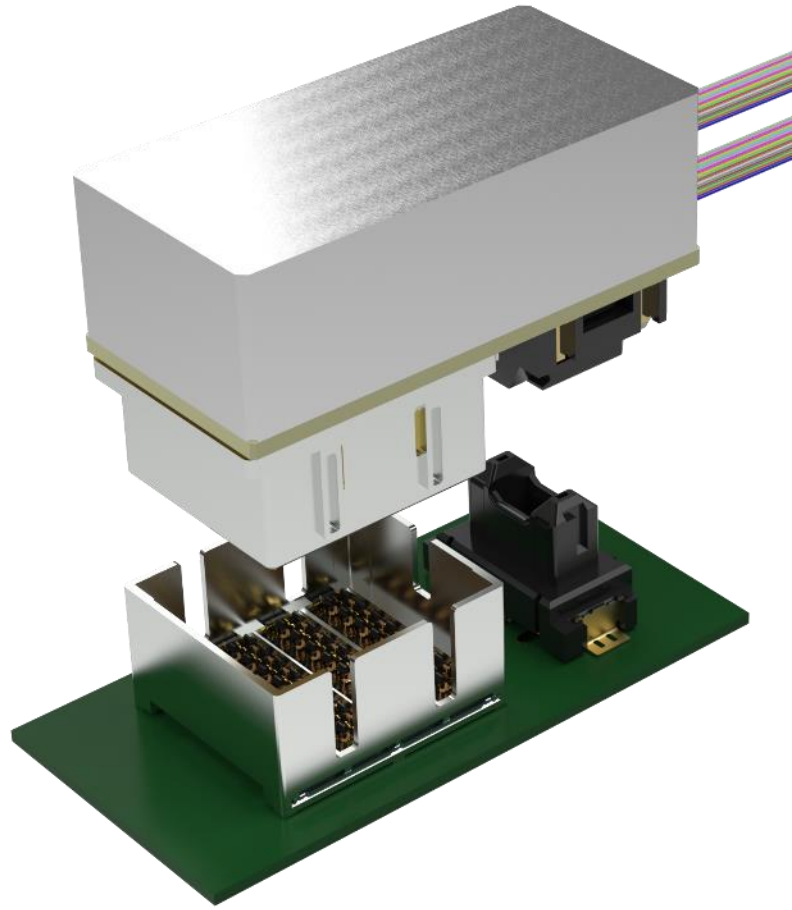
- Separate high-speed and power/control sockets
- 6.4 Tbps per socket
  - 64 DPs/32 lanes @ 200 Gbps
- Same or different mounting planes
  - High-speed socket: 10 mm stack height
  - Power/control socket: 10/13 mm stack heights
- <15 mm of beachfront width
- Flexibility of internal or external lasers



Near-packaged

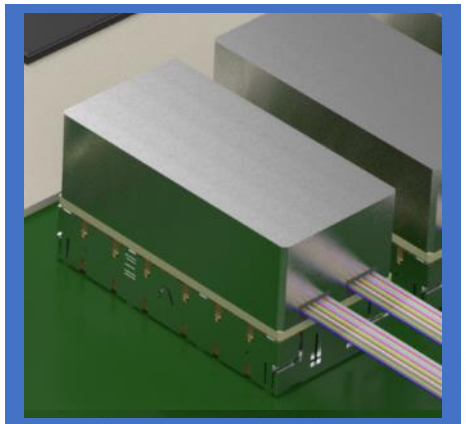


Co-packaged

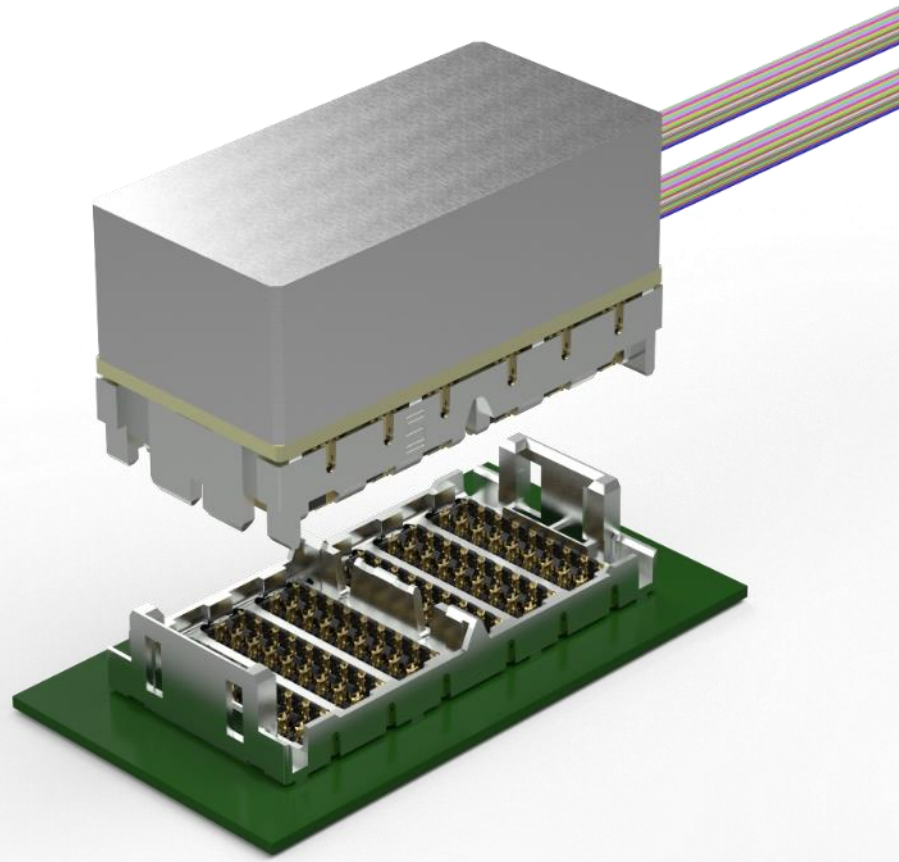


Open CPX MSA Type-2 Socket/Module

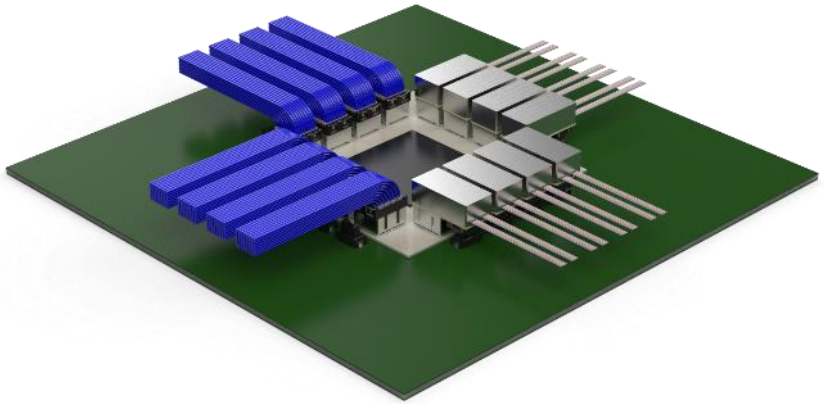
- Single connector with high-speed and power/control
- 7.2 Tbps per socket
  - 72 DPs/36 lanes @ 200 Gbps
- Single mounting plane
  - 7 mm stack height
- <16 mm of beachfront width
- Flexibility of internal or external lasers



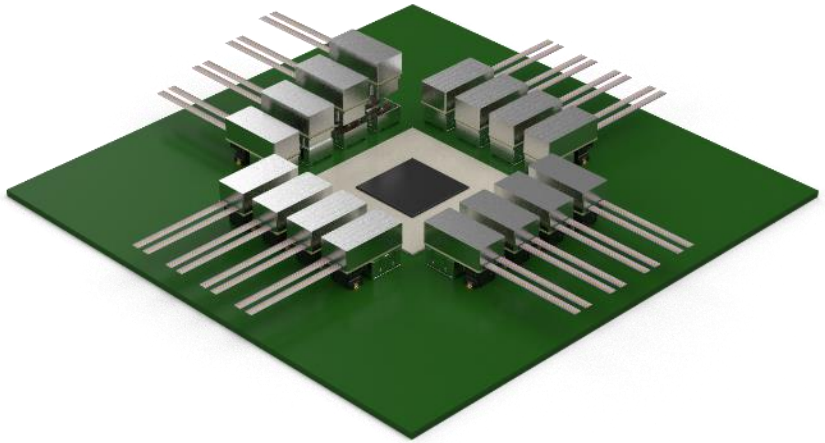
Near-packaged



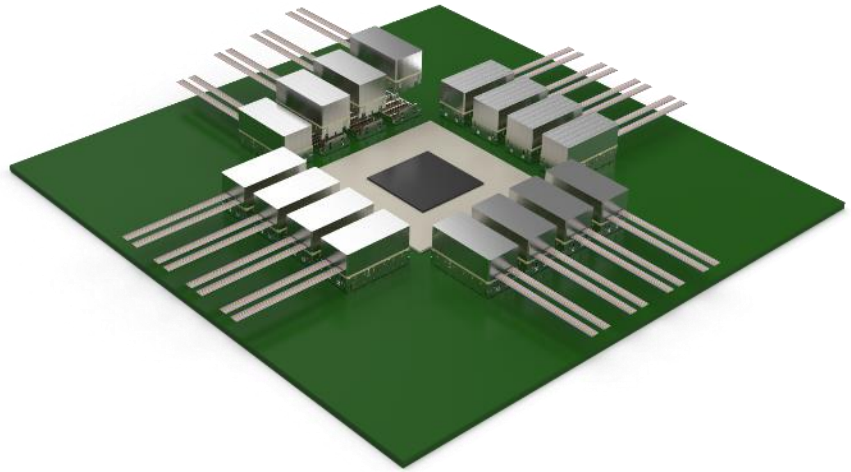
Open CPX MSA: Scale-Up & Scale Out



Type-1
Co-packaged

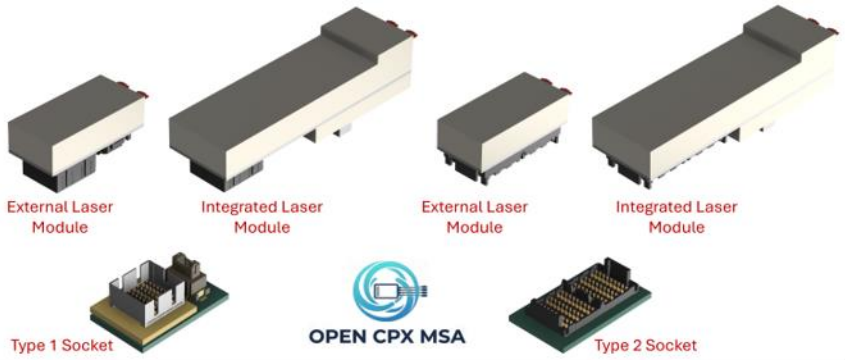


Type-1
Near-package



Type-2
Near-package

Open CPX MSA Roadmap



OPEN CPX MSA

Publications

September
Rev 1.0 Spec: 32/36 x 200G
Type 1 & 2, ILM & ELM

March
Rev 1.1 Spec: 32/36 x 200G
Copper media, Type 3, other TBD

June
Rev 2.0 Spec: 64/72 x 200G
Socket type(s), ILM & ELM, Copper

Late 2027 / Early 2028
Rev 3.0 Spec: N x 400G

2026 — 2027 — OFC — 2028

Milestones

March
Open CPX MSA Founded

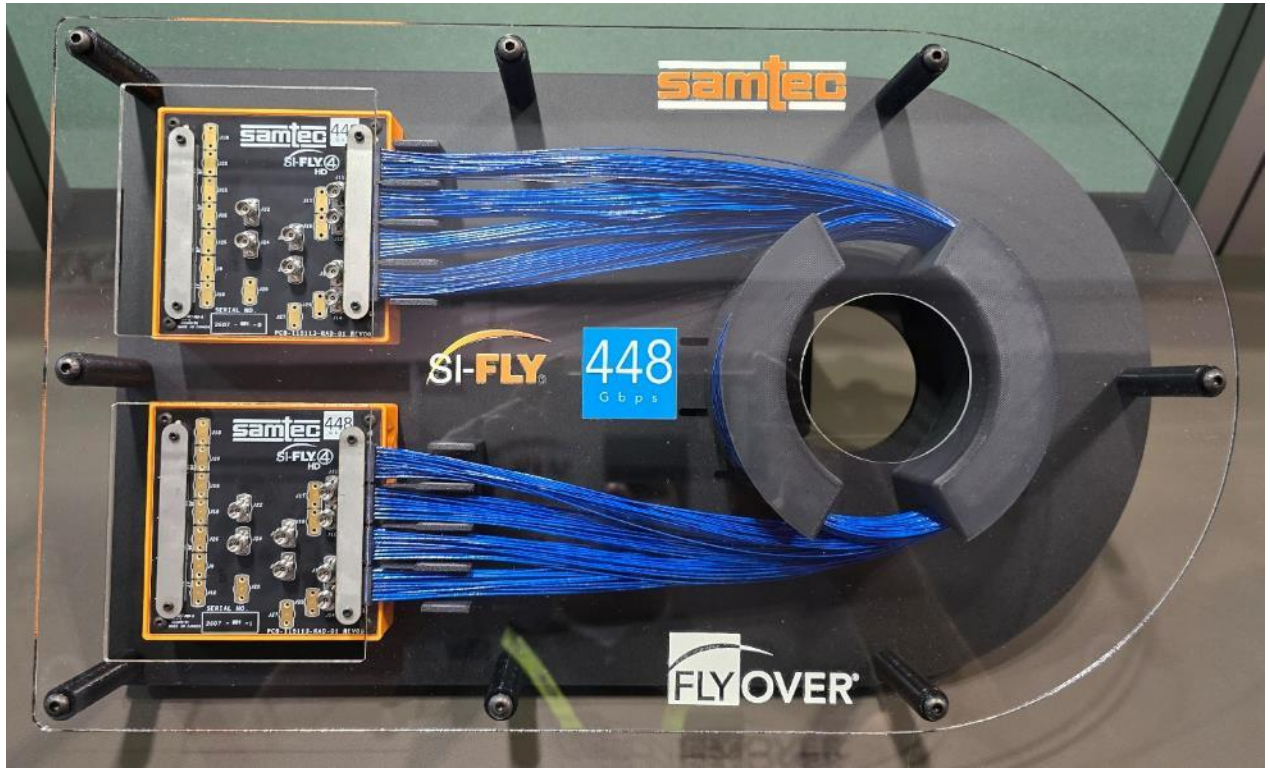
September
Open CPX Tops 50 Members

Subject to change without notice.

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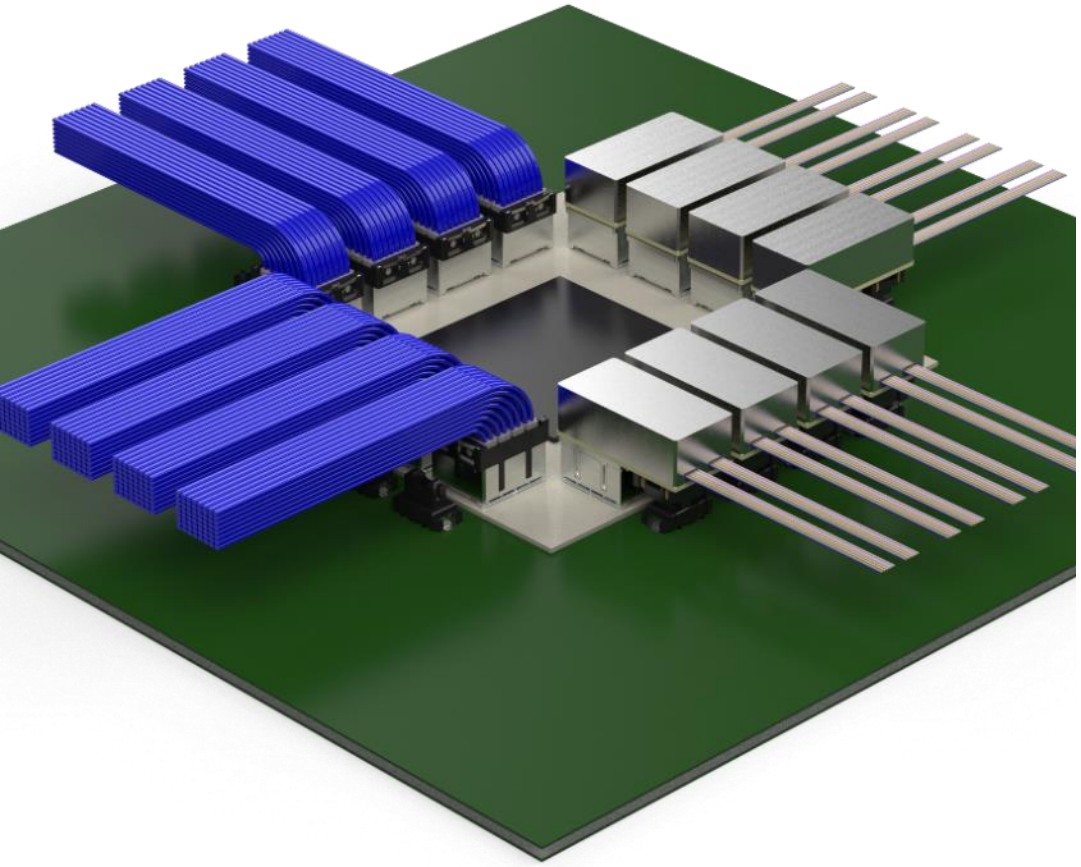
What's Coming? → 448 Gbps CPC/CPC

- PoC 448 Gbps Demo at OCP Global Summit

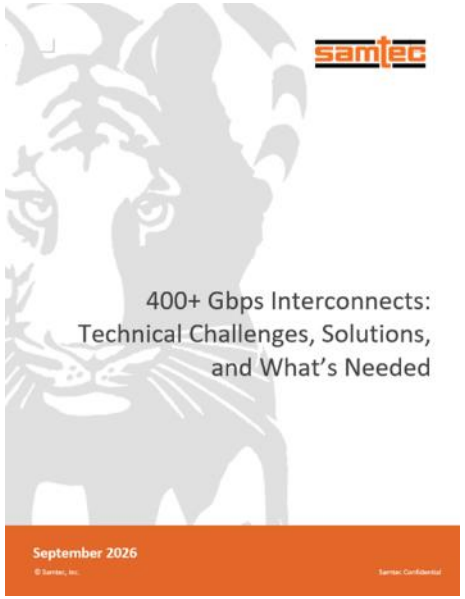


- Samtec Si-Fly® HD Co-Packaged System
  - Two Substrate Sockets
  - 1.0 m EyeSpeed® Hyper Low Skew cable
- Supports PAM4 and/or PAM6 encoding
- Ideal for AI scale-up and scale-out

Next Steps



- Visit Samtec @ Booth E-1
  - Get additional details on Si-Fly® HD
  - Learn about Open CPX MSA
  - Discover a “path to reality” for 400G
- Visit www.samtec.com/si-fly-hd
- Download our latest white paper:





www.samtec.com