PRELIMINARY DATASHEET

molex

Impress Co-Packaged Copper Solutions ›

Engineered to provide ultra high-speed data transmission that meets the needs of next-generation data centers, Impress Co-Packaged Copper Solutions include a compression-based substrate connector and mating cable assembly that support data rates of 224Gbps PAM-4 and beyond. The high-density Impress system uses 30 AWG twinax wires to deliver exceptional signal integrity, scalable density, efficient power delivery and robust durability in a compact form factor.

ADVANTAGES AND FEATURES

Optimizes high-speed signal integrity

On-substrate connectors minimize the distance signals must travel through the substrates, interconnects (such as ball grid arrays) and motherboard PCBs. This provides a finely tuned, full-channel solution that ensures complete isolation from the substrate to the interconnect, reducing signal loss and crosstalk.

Data Rates	224G+ PAM-4
Number of Circuits	Banks of 32 differential pairs (DPs) up to 128 or 512 DPs; banks of 64 DPs up to 256 or 1,024 DPs in development
Wire Gauge	30 AWG twinax (32 AWG twinax version in development)
Current	0.5A per DP

Improves re-workability

The two-piece connectorized system uses a compression-mounted socket, avoiding the need for SMT attachment and simplifying maintenance.

Protects the substrate surface

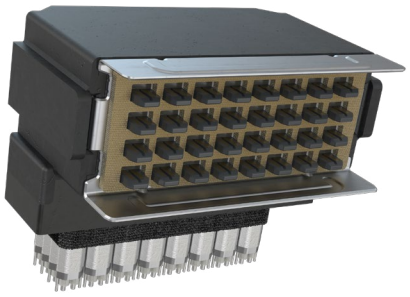
The compression socket interface avoids the need for screws through holes in the substrate and directs the wrench or cable routing force away from the substrate, preventing substrate damage.

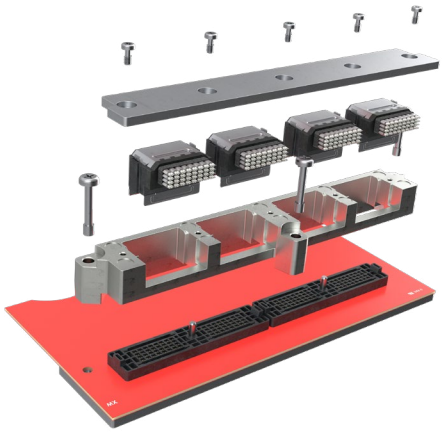
Ensures proper cable support

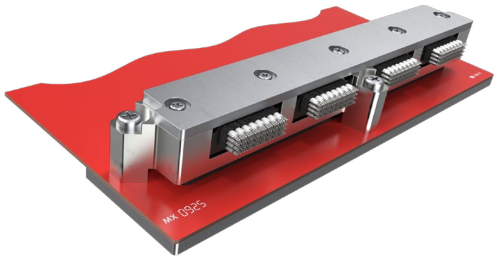
Overmolded strain relief helps prevent damage to the twinax cable, connector or substrate during assembly.

Enhances mating cycle durability

The mechanical wipe improves long-term reliability and permits more mating cycles without affecting system operation.







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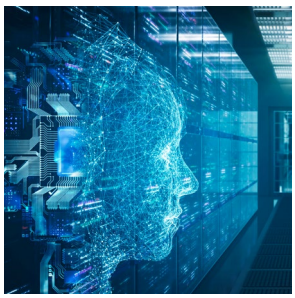
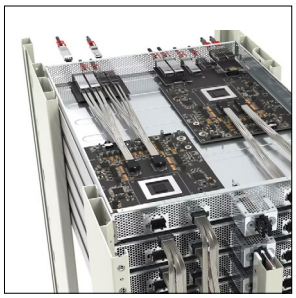
MARKETS AND APPLICATIONS

Servers and Storage

224G applications
AI and machine-learning systems
High-performance computing systems
Hyperscale data centers



AI and Machine-Learning Systems



High-Performance Computing Systems

Hyperscale Data Centers

PRELIMINARY SPECIFICATIONS

Reference Information

Designed in: Millimeters
RoHS: Yes
Halogen Free: Yes

Electrical

Data Rates: 224Gbps PAM-4 or faster
Impedance: 92 Ohms
Current (max.): 0.5A per DP
Voltage (max.): 50V
Contact Resistance: 35 milliohms
Dielectric Withstanding Voltage: 250V
Insulation Resistance: 100 Megohms

Mechanical

Circuit Sizes: Banks of 32 DPs up to 128 or 512 DPs; banks of 64 DPs up to 256 or 1,024 DPs in development
Wire Gauge: 30 AWG twinax; 32 AWG twinax version in development
Mated Height: 15.00mm (32-DP version), 21.00mm (64-DP version in development)
Durability (min.): 50 cycles

Physical

Housing: LCP UL 94V-0
Cage: Zamak 3 alloy
Contact: Copper alloy
Plating: 30µ" gold over nickel
Field Temperature and Field Life: +65°C for 10 years (based on EIA-364-1000)
Operating Temperatures: -40 to +85°C

www.molex.com

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