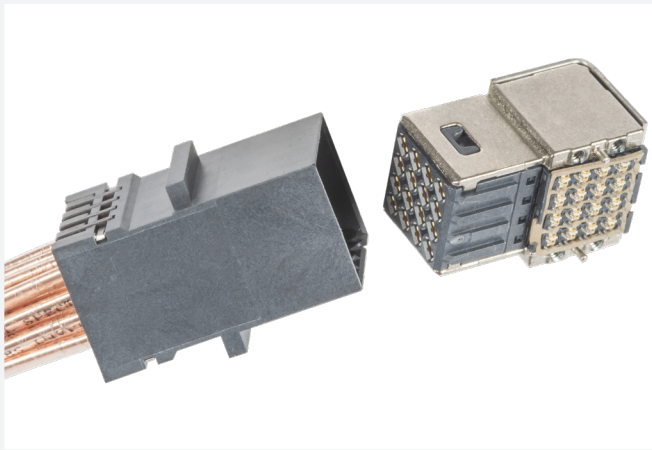
Paladin® HD2 224Gb/s Backplane Interconnect System

INDUSTRY LEADING DENSITY AND PERFORMANCE – YOUR PATH TO 224GB/S

The Paladin® HD family continues its legacy as the industry leading interconnect solution for high-speed applications. Paladin® HD2 leverages the same board attaches, twinax cable attaches, and mating interface as Paladin® HD for backward compatibility offering a direct upgrade path to 224Gb/s PAM4. Discretely shielded differential pairs and a revolutionary board technology allow unmatched performance and density.



TARGET MARKETS

- Industry leading SI performance supporting 224Gb/s data rates
- Revolutionary hybrid board attach technology to enable broadside coupled PCB launch while maintaining density advantage
- Exceptional density to maximize signal count and minimize air flow restrictions
- Impedance control over 1.00mm connector de-mate
- Backwards compatible with Paladin® HD for direct upgrade path

FEATURES	BENEFITS
World class SI performance at 224Gb/s	Greater than 40dB IL to XTalk margin at Nyquist for all architectures
Industry leading density at 224Gb/s	144 Differential Pairs within 1RU rack spacing orthogonally, including room for airflow
Consistent SI performance over the connectors mechanical mating range	Less than 5Ω impedance variation and minimal crosstalk impact over full wipe range
Linear transmission through 67GHz	No resonances through 67GHz
All system architectures supported; cables can terminate to other 224Gb/s product lines	Board-to-board, board-to-cable, PHD2 cable-to-cable, and PHD2 cable-to-Ultrapass (224Gb/s)
Maximized routing channels	Route 2 or more high speed differential pairs per layer
Mechanically matched and electrically balanced signals within each differential pair	Skew-less design with low mode conversion, while maintaining conventional trace breakout
Revolutionary hybrid board attachment: compression mount signals and press-fit grounds	Optimized for SI performance, density, and routing
Symmetrical mating interface	Supports both 90° and 270° orthogonal applications
Common differential pair components	Enables mass production scale with repeatable assembly steps for all configurations
Mate and footprint compatible with Paladin® HD and leverages proven differential pair architecture	Mate compatible upgrade path from 112Gb/s to 224Gb/s with reliable and robust design features

TECHNICAL INFORMATION

MATERIAL

- Contact Finish Area: Gold
- Contact Base Metal: High performance Copper Alloy
- Housings: High performance engineering thermoplastic

ELECTRICAL PERFORMANCE

- Signal Contact Current Rating: 0.5A
- Contact Resistance Change: 10mΩ max.
- Dielectric Withstanding Voltage: 250VAC peak

MECHANICAL PERFORMANCE

- 1.5mm signal wipe
- Housing gatherability ±1.0mm X and Y.
- Guide options available for increased gathering capabilities: including custom designs
- 200 Mating cycles

APPROVALS AND CERTIFICATIONS

- UL94 V-0

PACKAGING

- PVC Pick and Place Trays (ESD)

ENVIRONMENTAL

- Operating Temperature Range: -40°C to 85°C

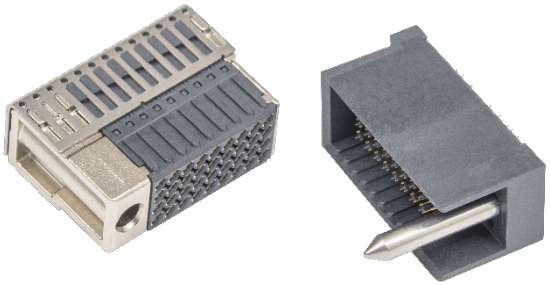
SPECIFICATIONS

- Paladin HD Direct Orthogonal General Guidelines
- Paladin HD Routing Guidelines
- Paladin HD General Product Specification
- Paladin HD Daughtercard Press-Fit Installation Process
- Paladin HD Daughtercard and Direct Ortho Module Removal and Replacement Process
- Paladin HD Connector Design Guidelines

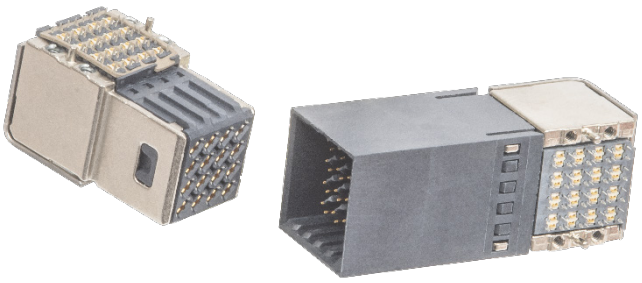
TARGET MARKETS/APPLICATIONS

Server
AI/ML Compute
Storage
Supercomputers
Switches/Routers

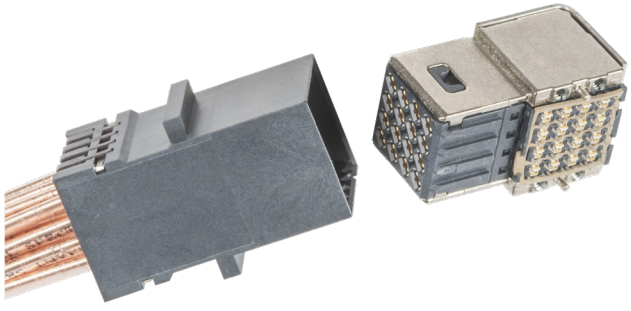
Wireless Infrastructure
Optical Transport



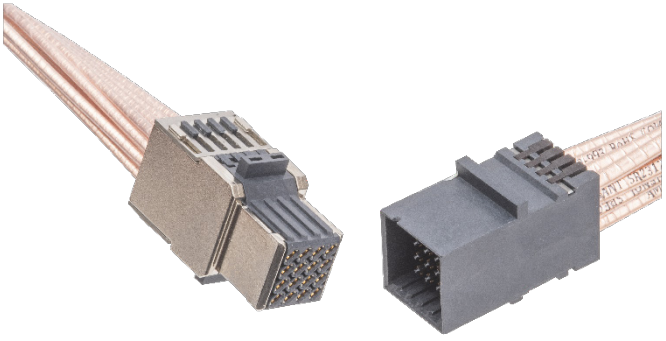
Backplane



Orthogonal



Board-to-Cable



Cable-to-Cable

HSBPPLDNHD2224G0424EA4