

Paladin® HD 112Gb/s Backplane Interconnect System

DENSITY AND PERFORMANCE OPTIMIZED

The Paladin® HD interconnect system provides world class bandwidth through industry leading density at 112Gb/s performance, supporting up to 144 differential pairs orthogonally within 1U spacing. Paladin® HD utilizes a balanced pair structure; built with individually assembled and discretely shielded differential pairs which have a revolutionary hybrid board attachment for maximized density. The mating interface is designed to optimize space and eliminate the traditional orthogonal “twist”. Paladin® HD utilizes a common mating interface between orientations and can support orthogonal and cable applications. Backwards mate compatible with Paladin® HD2 family for a seamless upgrade path to 224Gb/s.

- World class bandwidth and density, achieving 144 pairs orthogonal within 1RU at 112Gb/s
- Supports 4pr through 12pr wafer configurations
- Revolutionary hybrid board attachment
- Impedance control over a 1.50mm connector de-mate



TARGET MARKETS



FEATURES

- World class orthogonal density
- Industry standard performance for 112Gb/s channels
- Linear transmission beyond 40GHz
- Revolutionary hybrid board attachment: compression mount signals and press-fit grounds
- Maximized routing channels to minimize board layers
- Consistent Signal Integrity performance over the connector’s mechanical mating range
- Mechanically matched and electrically balanced signals within each differential pair
- Common and symmetrical mating interface
- Mate and footprint compatible with Paladin® HD2 and leverages proven Paladin® differential pair architecture
- All system architectures supported; cables can terminate to other Amphenol product lines

BENEFITS

- 144 differential pairs within 1RU card spacing
- More than 40dB IL to XTalk margin at Nyquist
- No stub resonances through 40GHz
- Optimized for SI performance, density, routing, repairability, and manufacturability
- 144 differential pair orthogonal can route in 6 high speed layers, up to 2 pairs per layer
- Under 5Ω of impedance change and minimal crosstalk impact while the connector is de-mated up to 1.50mm
- Mechanically matched signal lengths with low mode conversion with conventional trace breakout
- Supports Orthogonal applications in both 90° / 270° along with male and female cable
- Mate compatible upgrade path from 112Gb/s to 224Gb/s with reliable and robust design features
- Board-to-board, board-to-cable, and cable-to-cable applications supported, including internal overpass

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

- 2.00mm signal wipe
- Housing Capture: 1.00mm X and Y
- Guide Capture: 2.00mm X and Y
- Durability: 250 mating cycles

APPROVALS AND CERTIFICATIONS

- UL94 V-0

PACKAGING

- PVC 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 Module Removal and Replacement
- Paladin HD Connector Design Guidelines

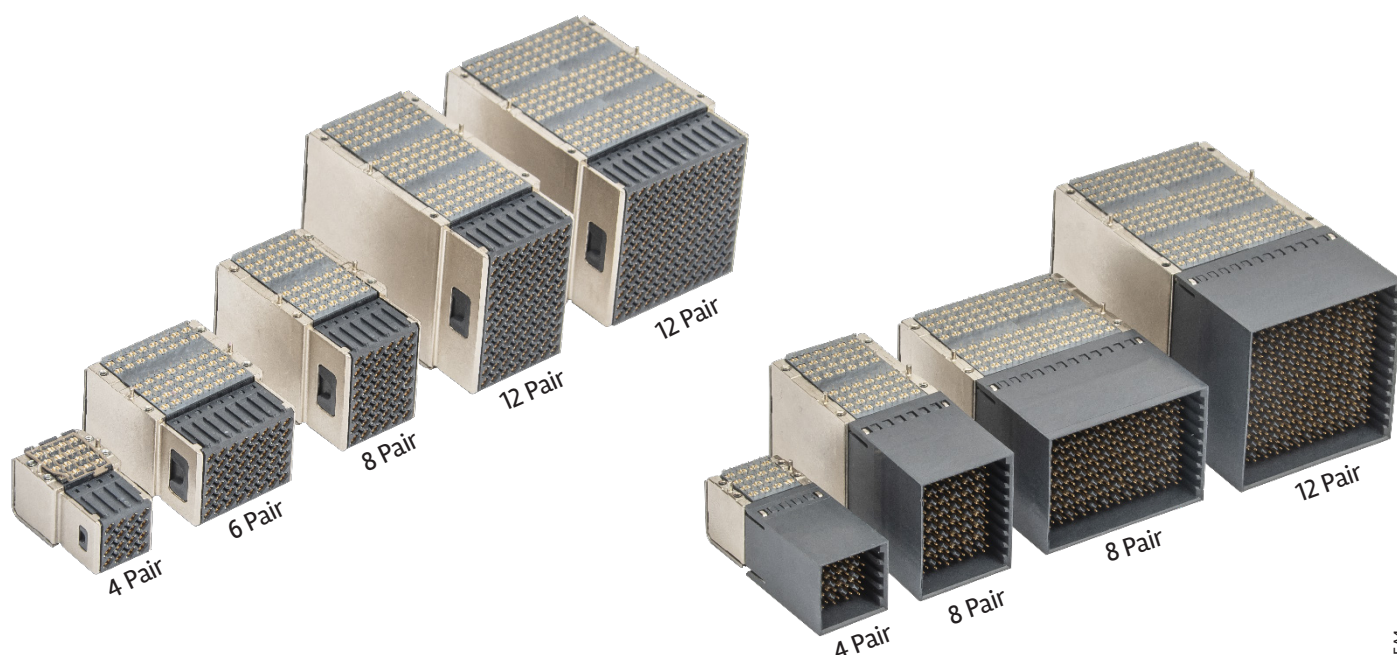
TARGET MARKETS/APPLICATIONS



Hubs
Switches
Routers
Optical Transport
Wireless Infrastructure



Servers
AI/ML
Storage
Supercomputers



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