

AIRMAX VS[®] ORTHOGONAL MIDPLANE CONNECTORS

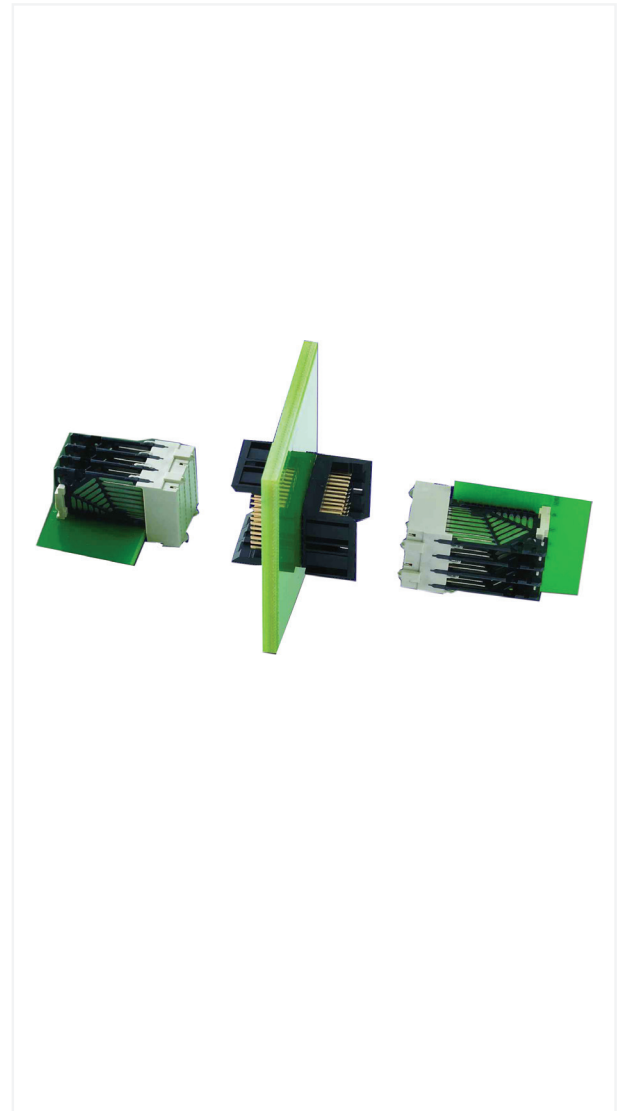
OVERVIEW

To further expand the range of applications supported by the AirMax VS[®] connector system, FCI has added a 4-Pair by 4-Pair Orthogonal connector solution. The connectors enable the efficient implementation of orthogonal midplane architecture, where vertical add-in cards on one side of a midplane are connected to horizontal add-in cards on the opposite side of the midplane. The AirMax VS[®] Orthogonal midplane interface features two back-to-back AirMax VS[®] headers oriented at 90 degrees to each other. The headers connect 16 differential signal pairs through shared vias in the midplane, providing a direct, high-speed connection while eliminating traces on the midplane. The AirMax VS[®] Orthogonal midplane interconnects can support differential signaling at up to 20Gb/s. System architects may now customize and assign their highest-speed signals to the orthogonal pins while routing other signals through the standard AirMax VS[®] backplane connectors. This additional capability offers yet another level of increased system design flexibility.

Since FCI first introduced the AirMax VS[®] connector system in 2003, FCI has continually added products and product extensions to the AirMax VS[®] family:

- Vertical receptacle and right angle header
- Vertical header and right angle receptacle
- Co-planar connectors
- Mezzanine connectors
- Power connectors
- Guide pins and guide blades

The AirMax VS[®] connector family has given system architects outstanding design flexibility at a low cost with proven signal speed performance to beyond 12.5Gb/s.



FEATURES & BENEFITS

- Enable orthogonal midplane system architecture
- Provide a direct connection between vertical line card cards and horizontal switch or communications cards on opposite sides of a midplane
- Provide capability to support 16 differential pair crossovers in a single module
- Headers install back-to-back and at 90° to each other
- Header signal pins share vias to provide a direct connection, eliminating the need for connecting traces
- Halogen-free connectors aid efforts to minimize the use of environmentally sensitive materials

- Use the same power and guide modules as backplane or midplane applications

TARGET MARKETS/APPLICATIONS

- Data
 - Servers
 - Storage systems
- Communications
 - Switches
 - Routers
 - Networking equipment



TECHNICAL INFORMATION

MATERIALS

- Contacts: Copper alloy
- Contact finish:
 - Performance-based plating over nickel at separable interface
 - Tin over nickel on press-fit tails on standard lead-free products. Tin-lead option available upon request
- Housings: High-temperature thermoplastic, UL94V-0

ELECTRICAL PERFORMANCE

- Contact resistance: $\leq 35\text{m}\Omega$ initial, $10\text{m}\Omega$ increase after environmental test
- Current rating ($\leq 30^\circ\text{C}$ rise above ambient in still air): $0.5\text{A}/\text{contact}$ with all contacts powered
- Differential impedance: $100 \pm 10\Omega$ @ 90 ps (10-90%) rise time
- Differential insertion loss: < 2 dB through 6.25Gb/s; < 3.5 dB through 12.5Gb/s

MECHANICAL PERFORMANCE

- Durability: 200 cycles
- Mating force: 0.60 N max./contact
- Unmating force: 0.15 N min./contact
- Compliant pin insertion force: 40 N max.

SPECIFICATIONS

- Product specification: GS-12-239
- Application specification: GS-20-035

APPROVALS AND CERTIFICATIONS

- Telcordia GR-1217-CORE Central Office

PACKAGING

- Tubes

PART NUMBERS

Differential Impedance (ohms)	Minimum Card Slot Spacing (mm)	Differential Pairs		Total Contacts	Number Of Columns	Column Pitch (mm)	Header Type	Module Width Along Card Edge (mm)	Signal Module Part Numbers	
		Total	Per Column						Midplane	Daughter Card
									Vertical Header	Right-Angle Receptacle
100	23	16	4	48	4	4.2	2-wall	16.6	10073718-101LF	10074050-101LF

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