

AIRMAX VS® ORTHOGONAL CONNECTORS

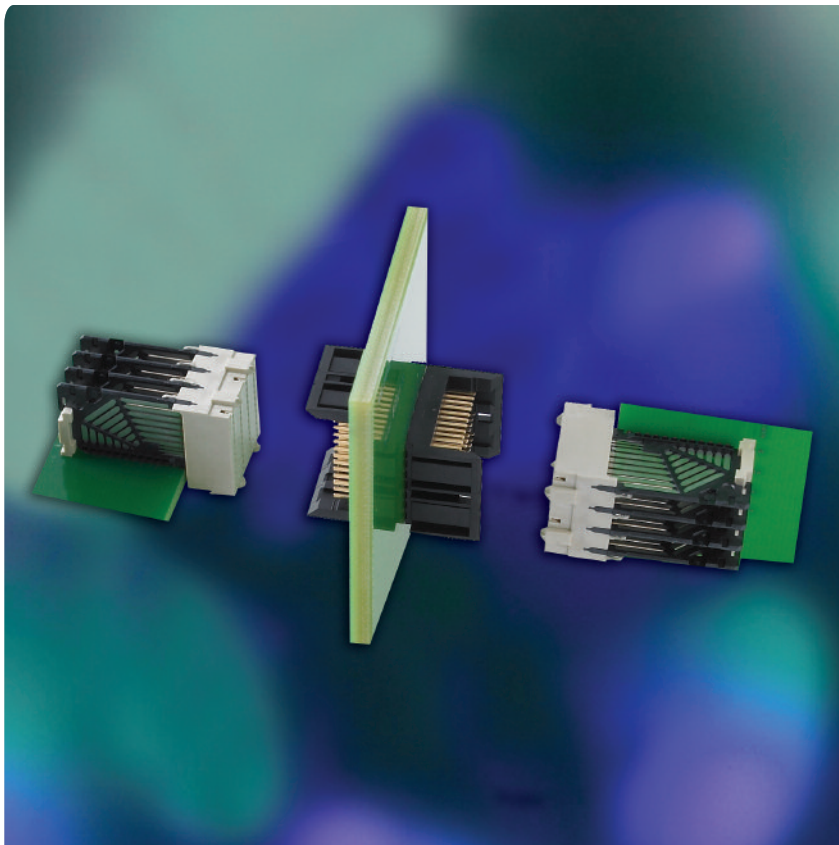
DESCRIPTION

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 20 Gb/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

- Compatible with Hard Metric design practice
- 4-pair x 4-pair Orthogonal connector solution
 - 16 differential pairs with shared vias on midplane
 - 4 differential signal pairs per column and 4 columns per connector
 - Contact pitch of 1.4mm within each column and 4.2mm between columns
- Supports differential signaling at up to 20 Gb/s
- Vertical header on midplane; right-angle receptacle on the daughter cards
- Press-fit tails are designed to fit 0.50mm finished hole diameter
- 16.6mm-wide modules
- Headers require a 3.5mm minimum midplane thickness for orthogonal applications

TARGET MARKETS / APPLICATIONS

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



TECHNICAL INFORMATION

MATERIALS

- Contacts
 - Copper alloy
- Plating
 - Gold or GXT™ over nickel on separable interface
 - Tin over nickel on the tails (RoHS compliant)
- Housing
 - High-temperature thermoplastic, UL 94V-0

MECHANICAL PERFORMANCE

- Mating force: 0.45N max per connector
- Unmating force: 0.10N min per connector
- Press-fit insertion force:
 - 50N max per header tail
 - 67N max per receptacle tail

ELECTRICAL PERFORMANCE

- NEXT: ≤ 5%, daughter card to daughter card, for a 55 ps (20 / 80) differential signal
- FEXT: ≤ 5%, daughter card to daughter card, for a 55 ps (20 / 80) differential signal
- Insertion loss: ≥ -6.5 dB for 20 Gb/s differential signal
- Differential impedance: 100Ω +/- 10%, excluding mid-plane PCB
- Skew: 6 ps maximum in-pair skew, when used as an orthogonal assembly
- Contact resistance: 35mΩ maximum initial, ≤ 10mΩ change after environmental test
- Current rating: 0.5A/contact for 30°C temperature rise with all contacts powered

SPECIFICATIONS

- Product specification: GS-12-239
- Application specification: GS-12-035
- Qualified per Telcordia GR-1217-CORE, Central Office

PART NUMBERS

Part Number	Description
10073718-101LF	AirMax VS Orthogonal 4-Pair Vertical Header
10074050-101LF	AirMax VS Orthogonal 4-Pair Right-Angle Receptacle

Use web link www.fciconnect.com/airmax to obtain product drawings and additional technical information.