

# ZIPLINE® ORTHOGONAL MIDPLANE CONNECTORS

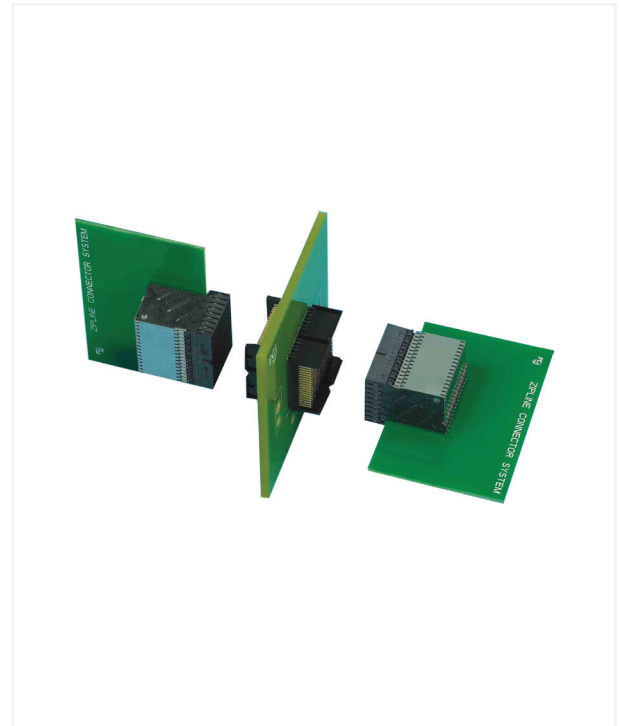
## OVERVIEW

Since the emergence of orthogonal midplane system architecture, more communications equipment designers are adopting this packaging scheme to accomplish direct, efficient connections between multiple line cards and a common switch or communications card. Vertical daughter cards on one side of a midplane have a direct connection to horizontal add-in cards on the opposite side of the midplane. The orthogonal solution eliminates long, complex traces, via stub effects, simplifies signal links and reduces backplane layer count.

FCI has developed high density and performance connectors that meet designer's requirements for up to 20Gb/s using 72 crossover pairs in a 25 mm card slot configuration.

Flexible connector design also enables designers to allocate connector columns to backplane or power wafers for product customization.

Tools have also been included to assist the designer.



## FEATURES & BENEFITS

- Provide capability to support 36 or 72 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
- Use the same right-angle receptacle as backplane, midplane, or coplanar applications
- Flexible design allows columns to be allocated to backplane or power wafers for product customization
- 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 MARKET/APPLICATIONS

- Data
  - Rack mount server
  - Blade server
  - Storage system
  - Storage drives
  - Printer
- Communications
  - Switching
  - Routing
  - Access
  - Transmission
  - Wireless base station
  - Wireless technology premises equipment
- Industrial, Instrumentation & Medical
  - Business & Retail equipment
  - Industrial control equipment
  - Instrumentation & medical



## 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, UL 94V-0
- Organizer: Stainless steel

### ELECTRICAL PERFORMANCE

- Contact resistance:  $\leq 130\text{m}\Omega$  initial,  $\leq 10\text{m}\Omega$  increase after environmental test
- Current rating ( 30°C rise above ambient in still air): 0.25A/contact with all contacts powered
- Differential impedance:  $100 \pm 12\Omega$  @ 60 ps (20–80%) rise time
- Differential insertion loss: < 2dB through 6.25Gb/s; < 5dB through 12.5Gb/s
- Near-end crosstalk (multi-active): < -35dB through 6.25Gb/s; < -25dB through 12.5Gb/s
- Far-end crosstalk (multi-active): < -36dB through 6.25Gb/s; < -26dB through 12.5Gb/s

### MECHANICAL PERFORMANCE

- Durability: 200 cycles
- Mating force: 0.45 N max./contact
- Unmating force: 0.15 N min./contact
- Compliant pin insertion force: 40 N max.

### SPECIFICATIONS

- Product specification: GS-12-452
- Application specification: GS-20-094

### 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						Backplane	Daughter Card
									Vertical Header	Right-Angle Receptacle
100	29	96	6	288	16	1.8	2-wall	28.8	10084160-101LF	10084155-101LF
100	27	72	6	216	12	1.8	2-wall	21.6	10076222-101LF	10076209-101LF
100	27	72	6	216	12	1.8	4-wall	23.4	10080640-101LF	10076209-101LF
100	27	36	6	108	6	3.6	2-wall	21.6	10078557-101LF	10078550-101LF

Note: The ZipLine module with 96 differential pairs provides 72 orthogonal pass/through pairs and 24 backplane pairs.

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