AltaVel™ High-Speed Digital Connector Family

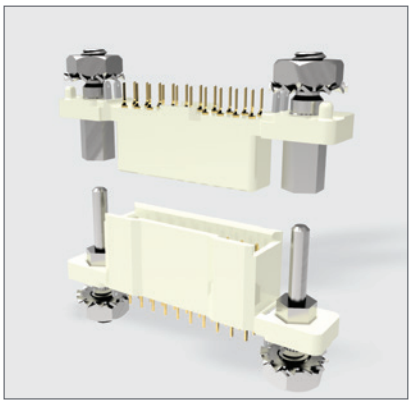
WHEN SIGNAL INTEGRITY AND DENSITY MATTER

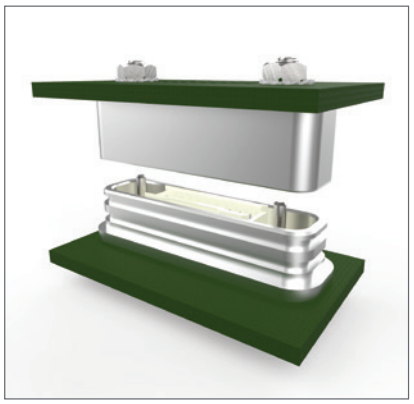
Amphenol CIT AltaVel™ family of open pin field High-Speed Digital Interconnect Solutions is optimized to provide scalability and reliability in dense, high-mate/de-mate cycle applications with data rates greater than 25 Gbps.

The broad family of connectors are available in the following configurations: Board-to-Board, Board-to-Cable, Cable-to-Cable, and Cable-to-Panel. All configurations are available in the following styles: Vertical-to-Vertical, Right-Angle-to-Vertical, and Right-Angle-to-Right-Angle.

These standard connectors are part of Amphenol CIT's full lineup of cost-effective, off-the-shelf, and customizable interconnect solutions delivering superior signal integrity performance and value.

FEATURES	BENEFITS
10,000 mate/de-mate cycles	• High signal integrity and reliability in a long-life package ensures high performance and lower cost of ownership
Flexible, scalable design	• High-density, scalable design provides multiple configurations, enabling optimum performance at the lowest total cost. Size ranges from 10 to 200 pins; configurable in 1 to 4 rows by 10, 20, 30, 40, or 50 positions. Configurable by pin/spacer height: 8 mm, 12 mm, 16 mm, and 20 mm.
With or without metal shells	• Rugged/EMI housing option is a readily available option for applications used in extreme environments
Open-pin field design	• Allows for flexibility in routing and coding schemes, including: single-ended, differential pair, power, ground, and sideband signals
Impedance: » Differential: 85 and 100 Ω » Single-ended: 50 and 75 Ω	• Multiple impedance options ensures a solution to meet your application
Board mounting options	• Termination styles: Surface Mount (SMT), Paste-In-Hole (PIH), and Plated Through-Hole (PTH)





Available contact and connector systems: 1) High-reliability contact system featuring three points of contact. Available in Surface Mount (SMT), Paste-in-Hole (PIH), and Plated-Through-Hole (PTH) termination styles. 2) Connector without metal shell, 3) Connector with metal shell.

SUGGESTED APPLICATIONS

- » High-speed digital boards and systems
- » High-speed digital HW and system verification
- » Defense and space
- » Network systems
- » Servers and storage – blade and rack mount
- » Switches
- » Routers
- » Optical transport carrier grade optical
- » Wireless infrastructure

AltaVel™ High-Speed Digital Connector Family

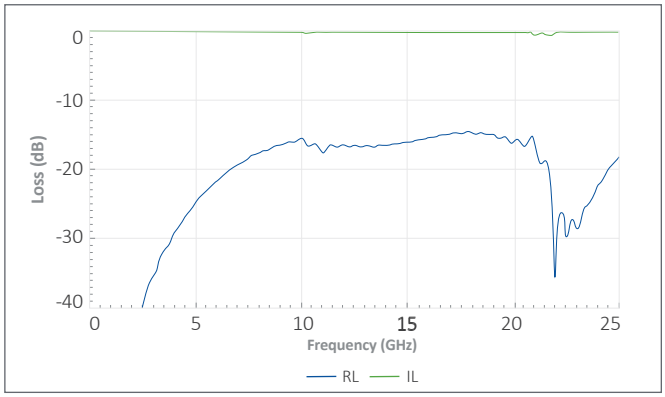
SPECIFICATIONS & PERFORMANCE

Parameter	Specification
Insertion Loss	<0.8 dB to 26 GHz (interconnect only)*
Data Rate	FDR - 14 Gbps, EDR - 28 Gbps & PCIe Gen4 - 16 Gbps, PCIe Gen5- 32 Gbps
Impedance	85 or 100 Ω differential impedance; 50 or 75 Ω single-ended impedance
Contact Rating	3 amp max, at ambient with 30° rise
Operating Temperature	-55 °C to 125 °C
Minimum Contact Wipe	1 mm (0.039") typical
Contact Mating Force	40 g typical
Insulation Resistance	5,000 MΩ minimum @ 500 VDC
DC Resistance (mated pair)	8.5 mΩ @ 8 mm stack height
Durability	Min 1,000 cycles and up to 10,000 mate/de-mate cycles
Sinusoidal Vibration	20 g (EIA-364-28, condition IV)
Shock	50 g (EIA-364-27, condition E)
Operating Voltage	200 V, RMS, 60 Hz typical

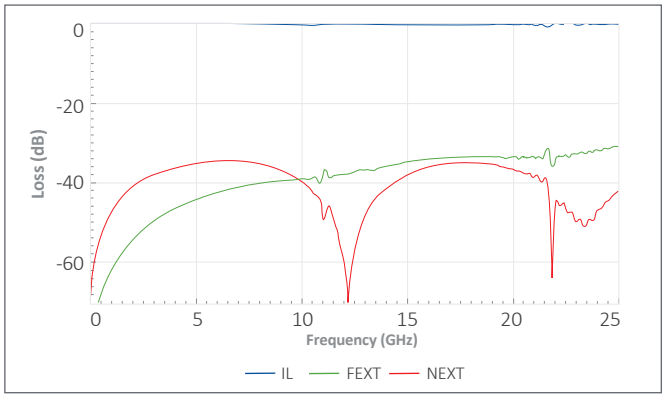
*Simulated data only

Materials & Finishes	
Pin Contacts	BeCu per ASTM B194, plated 30–50 gold over 100 nickel minimum in mated contact area, 5 gold over 100 nickel on tails
Socket Contacts	BeCu per ASTM B194, plated 30 - 50 μin gold over 100 nickel minimum in mated contact area, 5 gold over 100 μ nickel on tails
Contact Finish	Localized gold finish per ASTM B488 over nickel per ASTM B689 Type 1
Molded Insulators	30% glass-filled LCP per ASTM D5138
Hardware	Stainless steel
Shell (ruggedized)	Aluminum alloy
Finish (ruggedized)	Nickel plated
RoHS Compliant	Yes
Solderable:	Lead or lead-free

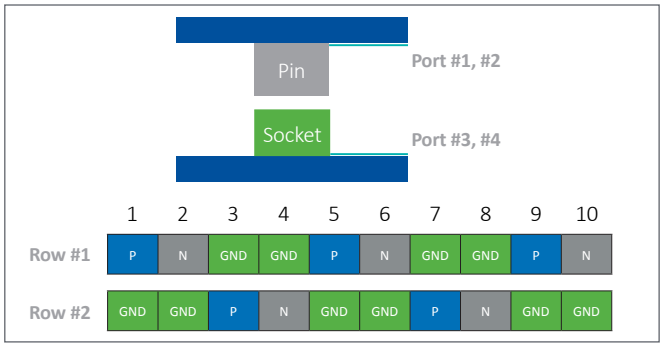
Insertion and Return Loss (Simulated)



Crosstalk (Simulated)



Test Setup — Differential Simulation included Footprint and Break-out Region + 6 mm



AmphenolCIT
Cable & Interconnect Technologies

Learn More:
Amphenol-CIT.com

+1 (800) 458-9960