



Delivering industry-leading signal integrity and density while providing a scalable price and performance path for future data-rate enhancements, the Impel™ system of backplane connectors and customized cable assemblies offers OEMs the option for equipment to operate at today's data rates and costs

Features and Benefits

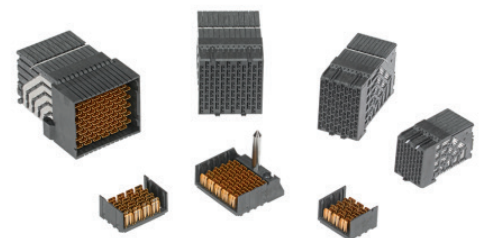
Compact, compliant-pin backplane and daughtercard connectors with data rates scalable from 25 to 40 Gbps	Enable backward and forward compatibility with various high-end system architectures
Molex patent-pending Impel™ connector technology with tightly coupled differential-pair structure	Provides optimal signal integrity and mechanical isolation through the connector system
Multiple pitch options available: 1.90mm pitch broad-edge-coupled; 2.35mm pitch orthogonal; 3.00mm pitch quad-route	Delivers superior density and electrical performance, low cross-talk, low insertion loss and minimal performance variations across all channels and frequencies to 20 GHz. Offers printed-circuit-board designers the flexibility to quad route the signal traces (two pairs per layer) reducing the PCB layer count
92 Ohms nominal impedance	Enables customers to minimize impedance discontinuities
Enhanced 0.36mm plated-through-hole diameter	Meets manufacturing aspect ratio while providing improved electrical performance
Skew-less design	Eliminates the need for compensating connector skew on PCB routing
Two compliant-pin attach options and 18 to 72 differential pairs per orthogonal node	Provide customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance
Staggered header-pin interface	Provides robust mechanical isolation from the signal pins. Mitigates the concern for bent pins in the field. Provides first-mate-last-break capabilities
IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant Channel Performance	Demonstrates end-to-end channel performance compliance
Custom cable assemblies available	Provides a full channel solution for all Impel headers and receptacles; provides design flexibility per application specifications

Impel™ Backplane Interconnect System

Headers, Receptacles and Custom Assemblies

- 171755** 6-Pair 3.00mm Quad-Route Backplane Headers
- 171760** 6-Pair 3.00mm Quad-Route Daughtercard Receptacles
- 172130** 6-Pair 1.90mm Right-Angle Male
- 172005** 5-Pair 1.90mm Backplane Headers
- 172010** 5-Pair 1.90mm Daughtercard Receptacles
- 171315** 4-Pair 1.90mm Backplane Headers
- 172140** 4-Pair 1.90mm Right-Angle Male
- 171320** 4-Pair 1.90mm Daughtercard Receptacles
- 171745** 2-Pair 1.90mm Backplane Headers
- 171750** 2-Pair 1.90mm Daughtercard Receptacles
- 171500** 6-Pair 2.35mm Orthogonal Daughtercard Receptacles
- 171495** 6-Pair 1.85/2.35mm Orthogonal Midplane Headers
- 171740** 6-Pair 2.35mm Orthogonal Direct Right-Angle Male (OD RAM)
- 171335** 3-Pair 1.90mm Backplane Header Assemblies
- 171990** 3-Pair 1.90mm Daughtercard Receptacles
- 171325** 4-Pair 3.00mm Quad-Route Backplane Headers
- 171329** 4-Pair 3.00mm Quad-Route Daughtercard Receptacles
- 171395** 6-Pair 1.90mm Backplane Headers
- 171400** 6-Pair 1.90mm Daughtercard Receptacles

Custom Cable Assemblies



Market and Applications

Telecommunication Applications

- Hubs, switches, routers
- Central office, cellular infrastructure and multi-platform service, (DSL, Cable Data)

Data Networking Equipment

- Servers
- Storage systems

Industrial Equipment

Military/Aerospace Equipment



Impel™ Backplane Interconnect System

Specifications

Reference Information

Packaging: Tray

UL File No.: E28179

Mates with:

See Ordering Information chart below

Designed In: Millimeters

RoHS: Yes

Halogen Free: Yes

Electrical

Voltage —

Daughtercard Receptacle (max.):
150V AC RMS

Cable Assembly (max.): 30V AC RMS
Current (max.): 0.75A

Contact Resistance (max.): 100mA; 20mV

Dielectric Withstanding Voltage:

Headers/Receptacles: 500V AC

Cable Assembly: 300V DC

Insulation Resistance —

Daughtercard Receptacle: 500V

Mechanical

Insertion Force to PCB:

Backplane Header — 26.69N

Daughtercard Receptacle — 17.80N

Mating Force:

60g per signal; 80g per shield

Unmating Force (min.): 15g

Durability (min.): 200 cycles

Physical

Housing: LCP

Contact: Copper Alloy

Plating:

Contact Area — 30μ

Compliant Pin Area — select Matte Tin

Underplating — Nickel

PCB Thickness (min.): 1.00mm

Operating Temperature: -40 to +105°C

Ordering Information

Backplane Headers* Series No.	Daughtercard Receptacles Series No.	Application	Pitch (mm)	Pairs
171755	171760	Quad Route	3.00	6
172005	172010	Standard	1.90	5
171315	171990	Standard	1.90	4
171745	171750	Standard	1.90	2
171495*	171500	Orthogonal	1.85/2.35mm	6
171335	171320	Standard	1.90	3
171325	171329	Quad Route	3.00	4
171395	171400	Standard	1.90	6

*Midplane Headers

Series No.	Component	Mating Component	Application	Pitch (mm)	Pairs
172130	Right-Angle Male	171400	Coplanar	1.90	9
172140		171320	Coplanar	1.90	4
171740		171500	Orthogonal	2.35	6
Custom	Cable Assemblies	-	-	-	-

www.molex.com/link/impel.html