

# Impel Plus Backplane Connectors and Cable Assemblies

**molex**

**Impel Plus Backplane Connector System achieves data rates up to 56 Gbps with superior signal integrity performance and enables backward and forward compatibility with compact compliant pins**

## Features and Advantages

### Compact, compliant-pin 56-Gbps backplane connector

Enables backward and forward compatibility with various high-end copper and cable architectures



### Innovative signal beam interface

Improves insertion loss compared to in-line signal beams. Pushes interface resonance frequency past 30 GHz



Impel Plus 3-Pair, 2.35mm-Pitch Right-Angle Orthogonal Direct Connector System

### Option for short compliant pin allowing 0.65mm backdrill and access to top layers for high-speed routing

Offers better signal integrity performance due to shallow PCB hole. Lowers PCB costs by reducing layers



Impel Plus 3-Pair, Right-Angle Daughtercard, 1.90mm Pitch

### Small compliant pin (0.31mm ± -0.05)

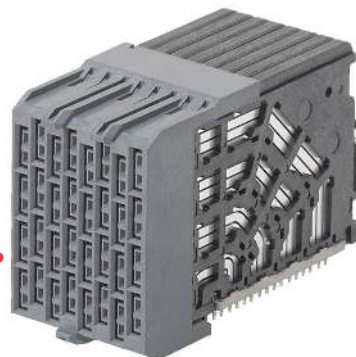
Reduces crosstalk by enabling optimized routing or use of pinning via

**Grounding tail aligner for lead frames and wafer shields**  
closer to daughtercard launch to improve ground return path  
Minimizes impedance discontinuities. Reduces crosstalk

**IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant Channel**  
Demonstrates end-to-end channel performance compliance

### 92 Ohms nominal impedance

Minimizes impedance discontinuities in the channel



Impel Plus 4-Pair, Right-Angle Daughtercard, 1.90mm Pitch

**3-, 4- and 6-pair daughtercards available with a range of column sizes**  
Delivers design flexibility

### Molex patent-pending Impel Connector technology with tightly coupled differential-pair structure

Provides optimal signal integrity and mechanical isolation through the connector system

### High-speed automation line is available for high-volume production of cable

Controlled manufacturing process provides cables with reliable and consistent signal integrity performance



Cable Assemblies Available with Impel Plus 3-, 4- and 6-Pair Daughtercards and Impel Cables (Assembly with Impel 6-Pair Daughtercard pictured)

**Complete mechanical, electrical and testing capabilities available to deliver a complete backplane solution**

Offers value-added cable trays

**Assemblies with Impel Cables up to 3.0m long can be configured with 3-, 4- and 6-pair Impel Plus Daughtercards**

Supports design flexibility to maximize density of differential pairs with cables

# Impel Plus Backplane Connectors and Cable Assemblies



## Applications

### Telecommunications/Networking

- Servers
- Switches
- Routers

### Data Center Solutions

- Servers
- Storage Systems

### Medical

- Patient monitoring



High-End Server

## Specifications

### REFERENCE INFORMATION

Packaging: Tray  
 UL File No.:  
 Mates With: Impel Vertical Backplane Headers (see other available Impel header options)  
 OD Daughtercard (Series 171510) mates with OD Header (Series 173460)  
 Designed In: Millimeters  
 RoHS: Yes  
 Halogen Free: Yes

### ELECTRICAL

Electrical  
 Voltage (max.): 150V AC RMS  
 Current (max): 0.75A  
 Contact Resistance: 100mA; 20mV  
 Dielectric Withstanding Voltage: 500V AC  
 Insulation Resistance: 500V

### MECHANICAL

Insertion Force to PCB (max.): 26.69N per tail  
 Mating Force: 60g per signal; 80g per shield  
 Unmating Force (min.): 60g  
 Durability (min.): 200 Cycles

### PHYSICAL

Housing: LCP  
 Contact: Copper Alloy  
 Plating:  
 Contact Area — 0.76 μm (30μ") Gold (Au)  
 Solder Tail Area — select Matte Tin (Sn)  
 Underplating — Nickel (Ni)  
 PCB Thickness (min.): 1.00mm  
 Operating Temperature: -55° to +85°C

## Ordering Information

Series No.	Component	Pitch (mm)	Number of Pairs
<a href="#">172730</a>	Daughtercard	1.9	3
<a href="#">204066</a>		1.9	4

Series No.	Component	Orientation	Pitch (mm)	Number of Pairs
<a href="#">171510</a>	Orthogonal Direct Daughtercard	Right Angle	2.35	3
<a href="#">173460</a>	Orthogonal Direct Header			

Series No.	Component	Pitch (mm)	Number of Pairs
<a href="#">Contact Molex</a>	Daughtercard	3	4
		1.9	6

Custom Product	Description
<a href="#">Contact Molex</a>	Assemblies with Impel Plus Daughtercard and Impel Cables

[www.molex.com/link/impel.html](http://www.molex.com/link/impel.html)

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