molex

External PCI Express (PCIe)

External PCI Express is a new, multi-purpose, hot-pluggable input/output (I/O) interface that can be used across the computing industry, from mobile equipment through high-end servers as well as communication equipment. These connectors were designed to fit all popular mechanical architectures without special or custom versions.

Molex technology provides customers' future scalability and flexibility by supporting Generation 1 PCIe data rates at 2.5 Gbps through Generation 2 bandwidths of 5.0 Gbps. The broad usage and versatility of this technology allows for cabled-system extensions to external I/O subsystems, meeting the needs for specific applications which include:

- Split systems or disaggregate PCs, desktop "consoles" that contain removable media drives, memory modules, I/O ports and audio jacks
- I/O expansion to extend the I/O card capabilities of the main system for support of different form factors, including legacy systems for test and measurement and for instrumentation
- Server expansion I/O to support conventional PCI Express add-in cards and express modules
- Graphic subsystems (controller and memory) located external to the main system

Molex's full range of connectors and cables include a high durability x1 TDP™ (rated for 1500 mating cycles) and x4, x8 and x16 iPass™ configurations (rated for 250 mating cycles). Molex also provides a complete offering if PCIe test boards for testing requirements.

Selection Matrix

PCIe x1 - 18 Circuit

74150
SMT Receptacle

74155
Plug

74576
Cable Assemblies

PCIe x4 and x8
38 and 68 circuits

75586
SMT Host Connector

74540
Guide Frame

74546
Cable Assemblies

PCIe x16 - 136 circuit

75581
Integrated Compliant Pin Assembly

74546
Cable Assemblies

External PCI Express products:

- **SMT Host Connector (series 75586)** The SMT design provides placement options on both sides of the PCB, as well as placement stability. With a pitch of 0.8mm (.031"), the design also allows for easy routing. Plus, standoffs allow for easy PCB cleaning after soldering.
- **EMI Guide Frames (x4 x8) (series 74540)** The guide frame gasket delivers improved EMI performance and the die-cast frame provides a robust cable-to-chassis interface. It also features a screw attachment to the PCB, offering a durable I/O connection for large cable bundles during the cable management process.
- **Integrated 136 Circuit Compliant Pin Assembly (75581 Series)** This low profile (13.13mm) 0.8mm pitch, fully integrated press fit connector assembly with cage, fits standard and low profile PCIe add-in cards, providing up to 32 differential pairs with one step placement to the PCB. The robust die cast design self aligns to the PCB and the screws mount to the PCB in four locations to optimize board retention.
- **External Cable Assemblies (series 74546, 74567)** Its high-performance paddle-card design with impedance matching helps reduce crosstalk and provide improved signal integrity. The assembly also features a flexible, low-profile, latch-pull mechanism that is easily accessible in high density applications. An EMI gasket seals the plug interface.

Markets and Applications

Server storage applications
- HBA (Host Bus Adapter)
- Servers and server expansion (add-in cards)
- Storage racks
- Switches and routers
- RAID (Redundant Array of Individual Discs)

Networking equipment
Computer applications
- Industrial computers
- Workstations
- Split systems
  - Removable media drives
  - Memory modules
  - Graphic subsystems
  - Networking

Computer
- High Speed peripheral devices
- Notebooks
- Express Card

Consumer devices
- HDTV consol stations and devices
- TV tuners
- High-end device interconnection
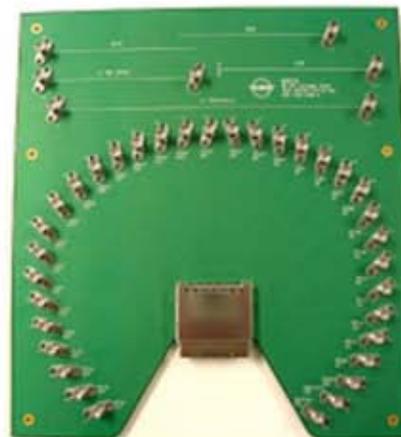- CAD stations

Test equipment
Instrumentation equipment
Industrial
- High-end digital cameras
- Document cameras
- High-end printers

Medical imaging

Test Boards

x1 Test Board

x8 Test Board

Ordering Information PCIe Test Boards

Order No.	Lane	Circuit
73931-2752	x1	18
73931-2542	x4	38
73931-2552	x8	68
73931-2562	x16	136

1 Lane = 1 transmit pair plus 1 receive pair per the PCIe specification

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