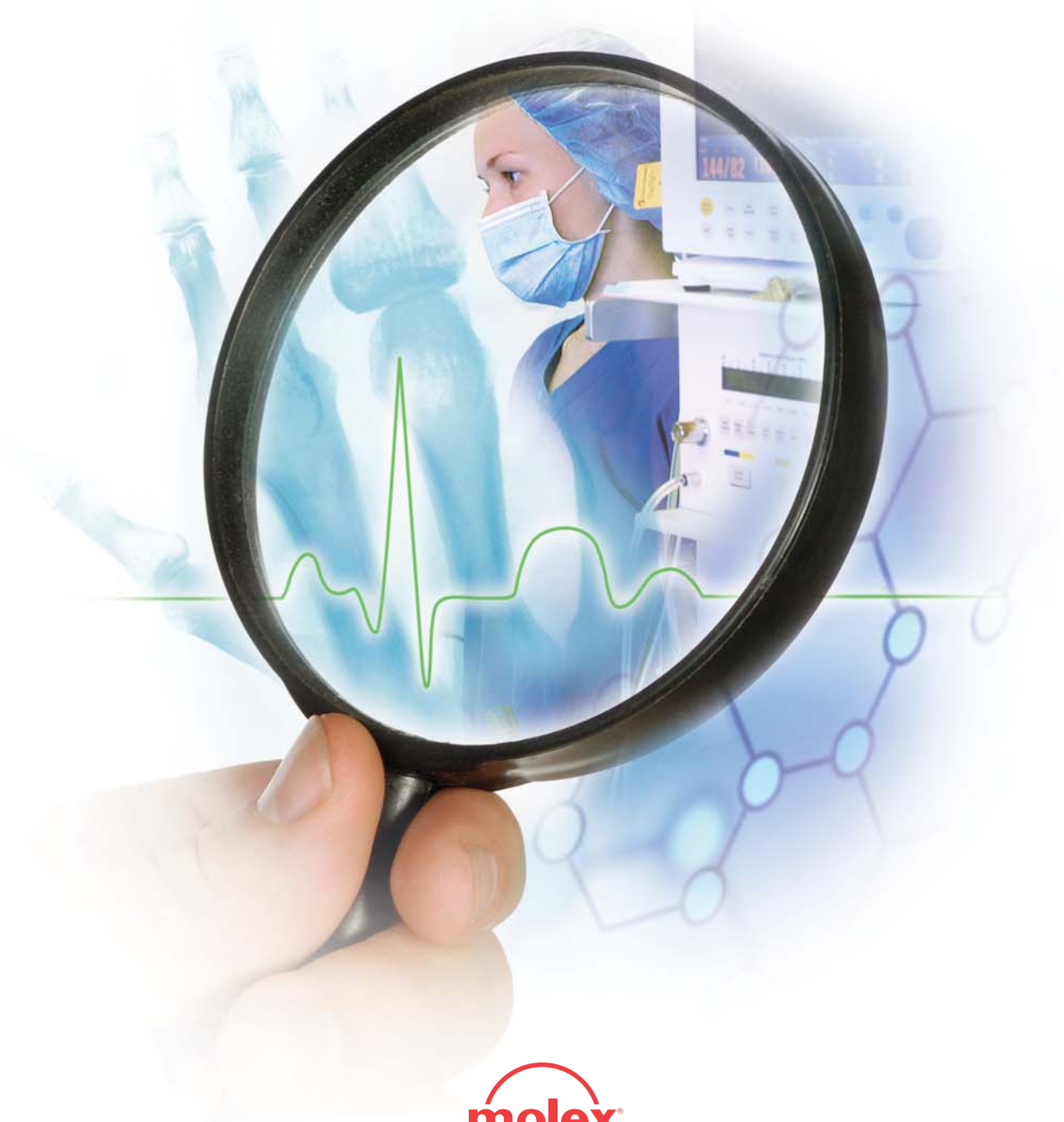


# Interconnect Solutions for Medical Electronics

Focused on meeting your application needs through superior innovation.



# Molex and the Medical Industry



*At Molex, we manufacture some of the most innovative and reliable interconnect products in the world. Our broad portfolio, combined with our comprehensive expertise, provides unlimited possibilities for applications in the medical electronics industry. We also understand you may face challenges that require additional innovation. That's why Molex includes integrated and custom solutions in our offering. Whether you are around the world or around the corner, we can assist you in reaching all of your design goals – with exceptional quality and efficiency.*

## We provide performance-driven solutions through:

- A focus on quality and reliability
- Knowledge, experience and understanding of medical industry needs and issues:
  - Use of medical-grade materials/bio-compatibility requirements
  - Autoclave/sterilization requirements
  - Sealed solutions
  - Long development cycles
  - FDA requirements
- Comprehensive design, engineering and manufacturing expertise
  - Integrated solutions
- Interconnect technology leadership
  - Electrically-engineered solutions
  - Molded interconnects
  - Miniaturization
  - Advanced manufacturing technology
- Global footprint for design and manufacturing

## Applications for the Medical Electronics Marketplace

Molex is a world leader of interconnect solutions in technology-driven industries such as telecom, data/storage, consumer and automotive. As a result, we are well positioned to leverage that breadth of knowledge to provide the best solutions for your medical electronic challenges.

Whether you are trying to solve interconnect miniaturization for a hand-held monitoring device or looking to achieve high-speed data transmission to meet complex imaging requirements, Molex has the technology and design capability to find a solution for your application.

We can offer high-quality, informed solutions across most medical industry product segments, such as:

- Patient monitors: including hand-held, portable and home-use devices – from blood-glucose meters to multi-parameter monitors
- Diagnostic imaging equipment: including large and portable systems – from ultrasound, to CT to MRI
- Therapeutic devices: including portable, hand-held and home-use – from infusion pumps, CPAP to defibrillators/AEDs
- Electro-surgical equipment: including instruments, tools and navigation
- Patient-handling equipment: including hospital beds and wheelchairs
- Lab and test instrumentation: including clinical diagnostics equipment and DNA testers

## Built For Reliability

In the medical industry, reliability of the electronics used is critical to the successful care and safety of the patient. The interconnects are a crucial element of overall system reliability. As a global leader in interconnect solutions, Molex has a proven track record of providing reliable solutions for demanding applications.

Reduce complications and improve your efficiency with Molex – your provider of total interconnect solutions.

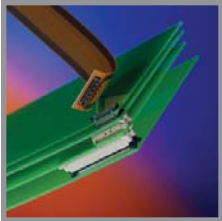
*Our broad portfolio, combined with our comprehensive expertise, provides unlimited possibilities for applications in the medical electronics industry.*



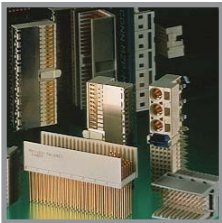


# Connector Products

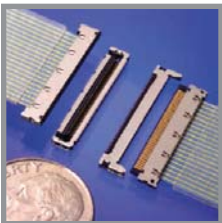
At Molex, innovative connector technology is the cornerstone of our interconnect solutions. High density, high speed, high performance and high reliability are just some of the characteristics which have become synonymous with Molex connector technology. Whether your medical application calls for a simple or a highly-engineered connector, Molex has what it takes to meet your needs.



0.40mm (.016") SlimStack™  
Board-to-Board Connectors



MZP™ Backplane Interconnects



0.40mm (.016")  
Microminiature Connectors



HandyLink™ Cradle/Docking  
Connectors

## Signal Connectors

### Wire-to-Board/Wire-to-Wire

- Multiple product families cover a broad range of packaging requirements
  - Pitches ranging from 0.40 to 5.08mm (.016 to .200")
  - Many configurations and options to meet your application needs
- Reliable, cost-effective solutions for all segments of medical electronic equipment

### Board-to-Board/FFC/FPC

- Several product families provide proven reliability for high-density, microminiature applications
  - Board-to-board pitches ranging from 0.40 to 2.54mm (.016 to .100")
  - FFC/FPC pitches ranging from 0.30 to 1.50mm (.012 to .059")
- Perfect for portable, hand-held or densely packaged medical devices

### Plateau HS Mezz™

Molex utilizes its proprietary Plateau Technology™ to provide a high-speed, high-density mezzanine connector system for differential and single-ended signal applications. The gold-plated plastic shields each differential pair from neighboring pairs, lowering crosstalk and improving signal clarity.

### Backplane Connector Systems

- Multiple product offerings to cover a broad range of speed/bandwidth and density requirements
  - Accommodates data speeds ranging from 1 to 10 Gbps
- Proven long-term quality and reliability
- Molex has experts in signal integrity and mechanical packaging to help custom design your layout

### Input/Output Connectors

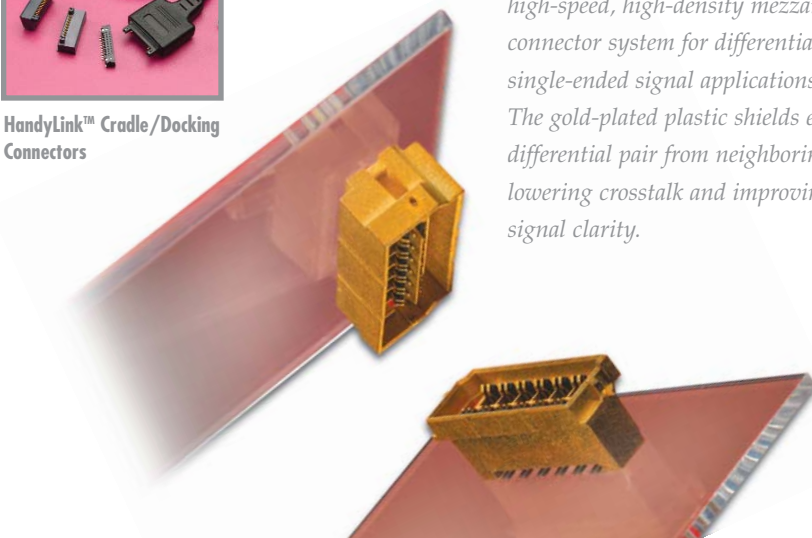
- Molex is a market leader of I/O interconnects for industry-standard as well as proprietary solutions
- For demanding medical I/O applications, leverage our expertise in termination, shielding, signal integrity and other aspects key to a reliable I/O solution

### Docking/Cradle Connectors

- Molex offers miniature, highly-reliable solutions for docking and cradle applications for your portable and hand-held devices
  - Board-to-board and wire-to-board solutions
  - Meet high-cycle-life requirements of medical devices
  - Shielded

### Memory Card Connectors

- Molex is a market leader in memory card interconnect products for industry-standard applications
- Reliable, cost-effective solutions for:
  - SD and miniSD
  - ExpressCard™
  - CompactFlash™
  - I/O Smart Cards
  - MMC and RS-MMC
  - And more...



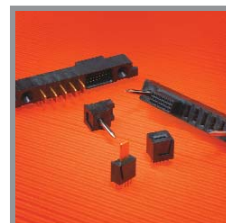


### Micro Coax

The Micro Coax system from Molex is the industry's first IDT-type 0.40mm (.016") pitch coaxial system; Micro Coax provides superior signal integrity, space savings and reliability.



MX150L™ Sealed Panel Mount System



Power Dock™



SMI Plastic Optical Fiber 1394 Connector/Transceiver



Ganged RF

## Power Connectors

### Wire-to-Wire/Wire-to-Board

- Molex has a complete and versatile offering of power interconnect solutions for medical electronic applications
  - Current ratings up to 115.0A per circuit
  - Many available configurations and options
- Complete line of sealed power connectors available

### Board-to-Board/Battery/Bus Bar

- Board-to-board power interconnects with:
  - Current ratings up to 40.0A per circuit
  - Mixed-layout options (power and signal)
  - Sequenced mating/hot pluggable
  - Guidance features for blind mating
- Battery connectors
  - Customized solutions
  - Meet high-cycle-life requirements
- Bus bar interconnect offering for power distribution
  - Stackable end-to-end

## Fiber-Optic Connectors and Adapters

- Molex is a leading supplier of advanced fiber-optic connectors and adapters
- Broad product range includes:
  - ST, FC, SC, LC, MPO
  - Custom solutions
  - SMI POF 1394

## RF Connectors and Adapters

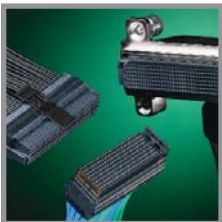
- Molex is a leading supplier of standard coaxial interconnect products
- Broad product range includes:
  - SMA, SMB, MCX, MMCX, BNC, ganged solutions and more
- Frequencies from DC to 40 GHz
- Custom solutions

# Integrated Products

As an end-to-end provider of interconnect-related technology, we can combine multiple Molex products into a single, complete system that's specifically built for your application. Instead of spending time trying to identify every item you'll need to fulfill your unique interconnect requirement – we do the work for you. This minimizes internal design time and allows you to realize exceptional cost savings.



Signal/Power Harnesses



High-Speed/High-Performance Cable Assemblies



Membrane Switch

## Cable Assemblies / Harnesses

- Add value to your Molex connector selections through our custom designed and manufactured cable assemblies and harness assemblies including:
  - Shielded I/Os
  - Industry-standard cables
  - Flat-ribbon cable
  - Flat-flexible cable
  - Fiber-optic/POF
  - Signal and power harnesses
  - Overmolding
  - High-speed/high-performance
  - RF/coaxial
- Leverage Molex expertise in mechanical and process engineering, electrical characterization and testing
- We offer global manufacturing to support your logistical requirements

## Membrane Switches/Front Panels

Used in front-panel applications, these are lightweight, low profile and extremely resistant to shock and vibration. They perform exceptionally well in medical applications where durability is essential.

- The reliability, functionality and ergonomics of a medical device front panel is essential to efficiently and safely utilize the device
- Molex is a leading manufacturer of custom membrane switch/front-panel assemblies with vast experience in medical devices
- Our capabilities range from simple printed flex circuits to complex control-panel assemblies
- Our products are designed and manufactured in a vertically-integrated environment for optimal quality and responsiveness to your requirements

### Membrane Switch/Front Panel

*Rugged enough for emergency response equipment used in extreme conditions, Molex membrane switches are designed and manufactured to the highest quality standards. Molex can design and manufacture a solution for your front panel needs.*





## Flex Substrates

Flex-circuit substrates offer a 3-dimensional packaging alternative to the combination of printed circuit board, connectors and wires. This allows for a single interconnect solution that is smaller, thinner, lighter and highly reliable. (The flex on the right wraps around a cylindrical structure, creating a 3-D solution.)

## Copper Flex-Circuit Assemblies

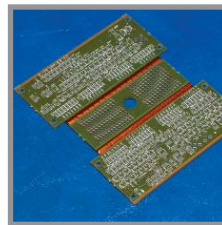
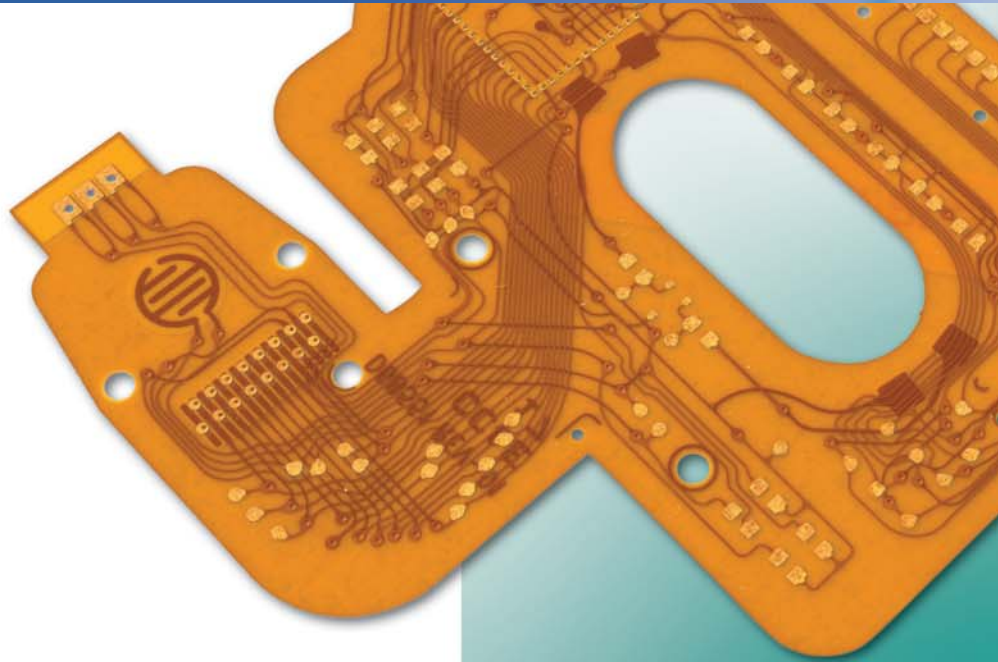
The Molex flex product line offers an array of printed circuit products that deliver exceptional space and weight reduction, while improving speed integrity.

- Copper flex offers thin, dense, versatile and reliable packaging for increasingly complex and compact medical devices
- Molex offers single-sided, double-sided, multi-layer (up to 20 layers) and rigid-flex product capability
  - Flex-circuit design and manufacturing
  - Assembly of components
  - Full test capability

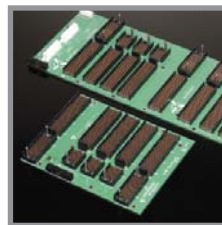
## PCB Assemblies

Molex has the comprehensive capability to design and manufacture your connector-intensive PCB applications (from high-speed backplane to microminiature board-to-board applications). We can also assist in packaging your PCBs into electromechanical solutions.

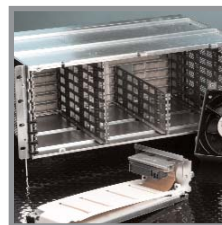
- We offer excellence in:
  - Circuit design
  - Signal integrity expertise
  - Mechanical design and integration
  - Process engineering
  - Automated component placement and reflow manufacturing processes
  - Full test capability



Rigid Flex



Backplane/Midplane Assemblies



Electromechanical Assemblies

## Customized Solutions

When it comes to investing in research and development, Molex is an industry leader. We know that by leveraging our internal product technology, we can drive a continuous supply of innovation directly to you. If you are faced with a specific challenge that cannot be solved through our existing portfolio of connectors and integrated products, we encourage you to contact us. We will collaborate with you to identify technologically appropriate solutions. You'll benefit from a professional project management team which will act as your interface to our global expertise across 19 countries on 6 continents.

To find out more  
about Molex solutions visit  
[www.molex.com](http://www.molex.com)



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