

ENABLING THE DEVICES ▶ THAT DRIVE INNOVATION IN HEALTHCARE



molex[®]

INTERCONNECT TECHNOLOGY

DRIVING ADVANCEMENTS IN HEALTHCARE

Developing next-generation medical technology is your focus. Ours is on providing the innovative electronics to power your vision. As an ISO 13485-certified company, we have proven expertise in medical device development. We can leverage solutions from other demanding industries, like consumer, mobile and telecommunications.

Molex offers a portfolio of solutions that support a multitude of possibilities for medical electronics. With everything from microminiature interconnect systems, to shock- and vibration-resistant components, to sealed cables, to capacitive switches, Molex helps enable your innovation.





An ISO 13485-Certified Company for Cable Assemblies and Fiber Optic Interconnects

Products and Applications

We're ready to meet your medical electronic needs.

Explore our capabilities now. Our interconnect offering includes:

- Printed Circuit Assemblies
- Microminiature Interconnects
- Internal and External Cable Assemblies
- Printed Circuit Products
- Temp-Flex® Specialty Wire and Cable
- Backplane Products
- Polymicro Specialty Optical Fiber and Capillary Tubing
- Non-Magnetic RF Custom Connectors and Adapters
- MediSpec™ Product Family

APPLICATIONS >

Patient Monitoring



You need to bring to market a cutting-edge portable cardiac monitor. In addition to the stringent medical requirements and standards, designs must now include ease of use for the layperson in their home. Molex can help: communication-integrated antenna and custom I/O solutions that are robust and foolproof.

The cost of inpatient medical care continues to rise. At the same time, more healthcare consumers want treatment options that let

them avoid a hospital stay. Enter telehealth — remote monitoring and communications solutions that connect clinicians and patients, almost anywhere. Telehealth solutions promise increased patient convenience, better quality of life and even greater access to care in remote parts of the world. But to be effective, these devices must be small, lightweight and extremely portable. Molex supports these needs with many solutions, including microminiature and ruggedized interconnects,

sealed cables, and advanced switch systems. Plus, our components have demonstrated success for a variety of monitoring applications:

- ECG
- Heart rate and/or pulse
- Temperature
- Blood pressure
- Disposable options
- Glucose



MediSpec™ MID/LDS Technology

When existing 2D technologies leave your design flat, Molded Interconnect Device technology, combined with Laser Direct Structuring antenna expertise, allows designers to integrate highly complex electrical and mechanical features into compact designs. Standard antennas are also available.

Printed Circuit Products

We offer clean sheet mechanical and electrical design, development and test support, including modeling and empirical testing. Our engineering teams work with you to ensure a design that meets your needs. Whether it is a small interconnect board or a complete module, we can offer global manufacturing, material sourcing, tooling and testing.

- Copper Flex
- User interface
- LED assemblies
- Affordable, disposable sensor options

Microminiature Products

Your device needs to migrate from a tethered office device to a small wearable monitor. Molex microminiature products provide the best designs for smaller real estate, while providing the same functionality in power and signal of a larger device.

- Compact, low-profile options
- Secure locking features
- Power, signal, discrete-wire and ribbon-cable applications
- Molex Core Micro Products of board-to-board, FFC/FPC, microminiature wire-to-board and memory card connectors offer long-term availability and support

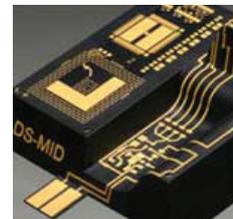
Affinity ECG Cable Assemblies

The design of the cable assembly is a very important consideration. You need a partner you can trust — someone with the engineering expertise in design and development that can enable your leading-edge technology.

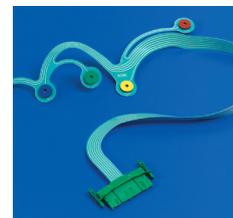
- Electrode-snap connectors, pinch connectors or banana-plug options
- ECG cables with removable leads in both DIN and AAMI styles
- AHA- or IEC-compliant markings
- Custom branding/molding is available
- ISO 13485-certified, FDA-registered manufacturer, AAMI ECD-53-compliant



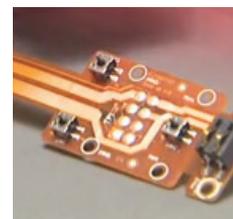
Affinity ECG cable assemblies



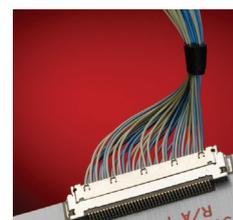
MediSpec™ MID/LDS technology



Printed circuit products



Copper flex products



Microminiature interconnects

APPLICATIONS >

Diagnostic Imaging



Remote imaging solutions are in greater demand than ever before. Clinicians need to receive diagnostic images from ambulances en route. Specialists are increasingly offsite, with the need for access to immediate data. But transmitting this type of complex data requires the most advanced, precise systems available. That's exactly what Molex delivers — integrated solutions that enable clear communication, from the point of data capture to receipt. Our solutions offer:

- High-density in small spaces
- The ability to replace multiple interconnects with a single system
- Deeper data with greater clarity
- Resistance to shock and vibration
- Quality processes and creatively designed products

Whether you're designing an MRI, CT or an ultrasound machine, Molex has the solution.



Non-Magnetic RF Connectors and Cable Assemblies

We are leading suppliers of off-the-shelf and custom RF coaxial interconnects and cable assemblies — covering frequencies from DC to 50 GHz. For imaging applications, we utilize nonferrous materials and finishes. With equipment to measure permittivity of materials, you can be assured all non-magnetic coaxial connectors meet your application requirements.

Cable Assemblies

Molex offers a range of solutions for internal and external diagnostic applications.

- Affinity Custom Cables and Connectors — The design of the cable assembly is a very important consideration. You need a partner you can trust. Someone with the engineering expertise in design and development that can enable your leading-edge technology.
- From storage and HDMI connectors, to internal power delivery, Molex can provide off-the-shelf or modified solutions.

Fiber Optics

- Custom design for both production and small prototype for any type of value-added assembly
- In-house precision molding capabilities for design of new hand-pieces, trays, lens components
- Ability to terminate and test fiber, power and signal connectors in the same assembly
- Specialty fiber and custom tubing drawn in-house

Printed Circuit Products

Our products include membrane, capacitive and resistive switches, copper flex with LEDs and Resilient Flex™. Available in options for everything from high-power to high-signal-speed applications, Molex flex circuit assemblies are all-in-one solutions with low total-applied costs.

Features include:

- Thin, low-profile, micro-motion assemblies
- One or more layers of silver or carbon conductors printed on polyester substrate layers
- Haptic, or tactile vibration, feedback and proximity sensing available
- Ideal for resistance to harsh chemicals and environments
- Form factors that require bendable/flexible substrates



Affinity custom cables and connectors



Non-magnetic RF connectors and cable assemblies

APPLICATIONS >

Therapeutic and Surgical



As the popularity of minimally invasive surgery and implantable medical devices continues to grow, so does the need for technology that combines power, portability, miniaturization and digital bandwidth. In particular, devices such as pacemakers and infusion pumps that become part of a patient's everyday life need to be easy to operate, simple to maintain and extremely reliable. Molex can support the demands for critical, life-saving technology with an incredible breadth of

solutions, including some of the smallest interconnects available. Our products are used in:

- Respiratory devices
- Neurostimulation solutions
- Endoscopes
- Catheters
- Defibrillators
- Hearing aids
- And more



Temp-Flex® Specialty Wire and Cable

52 to 24 AWG wire for demanding applications that require biomedical coatings and materials for implantable and minimally invasive applications.

- MediSpec™ Micro Miniature Coils (MMC)
- Temp-Flex MediSpec High-Density Micro-Ribbon Cables
- Temp-Flex MediSpec Micro Extrusion Primary Wires

MediSpec Hybrid Circular MT Cable Assemblies and Receptacles

A three-port connector that is available in any combination of optical or copper media options, MT cable assemblies feature a robust interface, high mating cycles and ruggedized metal body. A plastic body option is also available.

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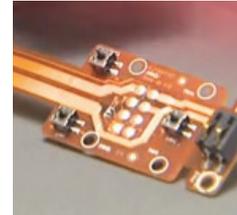
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Microminiature Interconnects

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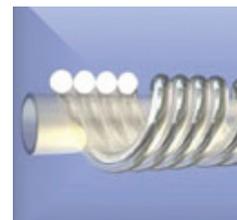
- Compact, low-profile options
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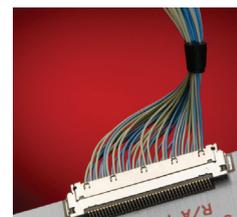
Copper flex products



MediSpec™ hybrid circular MT cable assemblies and receptacles



Temp-Flex™ specialty wire and cable



Microminiature interconnects

APPLICATIONS >

Therapeutic and Surgical (continued)

Cable Assemblies

Molex offers a range of internal and external solutions for therapeutic and surgical applications.

Internal solutions include:

- Ribbon cable
- Flex circuits and jumpers
- Power

External solutions include:

- Fiber optic
- Affinity custom cables and connectors
- ISO 13485-certified solutions

Backplane Products

Support speeds up to 40 Gbps with our backplane/midplane solutions that meet the demand for increased network bandwidth and advanced technology.

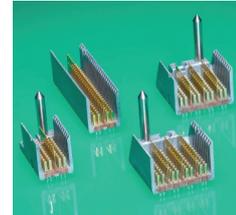
- VHDM® Backplane Connector Systems
Data Rate: 2.5 to 6.25 Gbps
- GbX® Backplane Connector System
Data Rate: 10.0 Gbps
- Impact™ Backplane Connectors and Cable Assemblies
Current Density: 25 Gbps
- Impel™ Backplane Connector System
Data Rate: 25 to 40 Gbps

Polymicro Specialty Optical Fiber and Capillary Tubing

Supplying specialty optical fibers, capillaries and assemblies for surgical and diagnostic application, Polymicro manufactures medical products in an ISO 13485:2003-certified facility with a Class 7 low bio-burden clean room.

Solutions include:

- Side-fire and diffuser assemblies for medical procedures
- Unique flexible delivery systems for high power medical lasers, including CO₂, YAG, and UV
- Optical fiber and capillary components for invasive probes
- Product and process development
- Prototyping and beta trials
- Volume production
- Packaging and sterilization



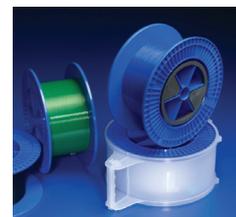
GbX backplane connector system



Resistive touch screens



Cable assemblies



Polymicro specialty optical fiber and capillary tubing

From Patient Monitoring to Diagnostic Imaging to Therapeutic and Surgical, Molex has a wide range of internal and external solutions.



molex.com/industry/medical.html