

Advancing Medical Device Technology: The Future is Flexible

The right choices can mean the difference between life and death.

SITUATION

Better Technology equals better healthcare.

The demand continues to grow for advanced, on-body medical devices across therapeutic, diagnostic and monitoring applications. As these once-separate capabilities merge, manufacturers will need to engage increasingly complex circuitry to create real-time, lifesaving connections between doctors and patients.

At the heart of this medical innovation: connected devices and the data they transmit between major subsystems – sensors, processors, user interfaces, communication and power. This expansion of subsystems and features to drive increased information analytics creates design challenges for developers to maintain light, flexible, comfortable, low-profile end products.

At the same time, expectations for on-body devices mandate increased functionality, driving modularity with more flexible assembly, connection points and multiple printed circuit board (PCB) designs. This high density in a small space requires compact connection points between flex boards and PCBs.

Are your interconnectors optimized for better patient outcomes?



TREND 1:

Maximum Power in Minimal Package

- Feature-rich devices require more power in the same (or smaller) space, requiring low-to-mid-power connections.
- Demand for space savings with increased internal density will drive shifts from wire-to-board or flex-to-board in how power is supplied in the board

TREND 2:

Real-Time Information Requires Faster Connections

- Fast connection is critical. Sensors process and interpret more information at higher processing speeds, requiring high signal integrity (SI) performing connectors.
- Higher resolution displays require increased EMI and SI performance
- Antenna bands drive more information at higher processing speeds requiring more active and passive components.

TREND 3:

Space Constraints Require Profile Flexibility

- The inside profile of medical device applications is becoming more space constrained. Increased modularity limits the space from the connector and other components, requiring more profile and orientation micro connector options.
- Multiple profile and orientation micro connector options give device designers flexibility to address space, location and connector entry point challenges.

WHAT'S TRENDING

The Right Connector for Better Outcomes, Increased Comfort

Molex engineers employ a consultative approach to develop cutting-edge solutions to the medical industry's most challenging problems.

Moving beyond the confines of past medical device strategies, we leverage innovations from other markets and push beyond theoretical boundaries to develop real-world solutions that help to ensure optimal health monitoring.

These products help to create real-time, and possibly even lifesaving, connections between doctors and patients through cutting-edge devices and the data they transmit.



Contact us to learn how these Molex products can support your medical device designs:

- [Pico-Lock Connector System](#)
- [Pico-Clasp Wire-to-Board Connectors](#)
- [SlimStack FSB5 Series Connectors](#)
- 3.0 to 10.0A [Power Connectors](#)

SOLUTION: **Pico-Lock Wire-to-Board Connectors**

- Side positive locking system for high retention force and max space savings
- Ultra-low-profile right-angle design
- Up to 3.5A per circuit design



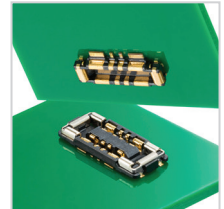
SOLUTION: **Pico-Clasp Wire-to-Board Connectors**

- Design flexibility with multiple pitches, mating orientations, dual-and single-row options
- Robust low-profile mechanical locking system for optimal retention force



SOLUTION: **Power Board-to-Board Connectors**

- 3.0 to 10.0A of current capabilities
- Dual-contact terminal design for signal assurance during high shock and vibration
- Wrap-around nail design for additional mechanical robustness



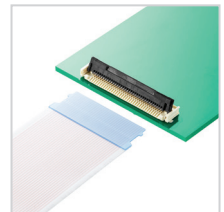
SOLUTION: **SlimStack FSB5 Floating 0.4mm-Pitch Board-to-Board Connectors**

- +/- 0.5mm of floating range in any direction for ease of mating and superior performance in high shock and vibration environments
- 125°C operating temperature
- High speed supports up to 6 Gbps
- Offered in multiple mating heights



SOLUTION: **Easy-On 0.5mm-Pitch FPC Connectors**

- Multiple orientations, including vertical and right angle
- Large range of actuator styles for design flexibility and robustness
- Multiple profile options for maximum space savings



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