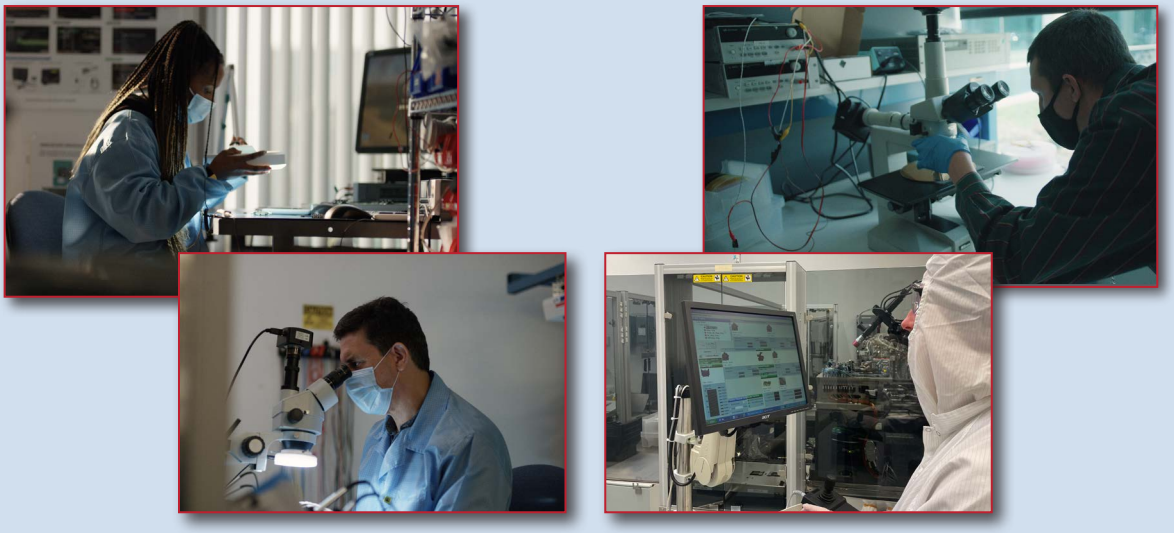
Menlo Micro: Setting a New Standard in Switch Technology



Menlo Micro, founded in 2016, is on a mission to set a new standard in switch technology. Menlo Micro's foundational technology is its Ideal Switch, which incorporates the benefits of electromechanical and solid-state switches. Menlo leverages this technology to create solutions for industries, including test and measurement, aerospace and defense, industrial, medical, telecommunications, consumer and automotive.

The Ideal Switch combines the nuances of semiconductor manufacturing with a micro-mechanical actuator, creating a high isolation airgap when OFF and a near-zero resistance when ON. The foundation of the switch platform is a 100 µm x100 µm unit cell, approximately 90 percent smaller than traditional switches, and is configurable in series or parallel designs to allow for a multitude of product configurations. In addition to these sizing advantages, the Ideal Switch uses proprietary alloys that are resilient to high temperatures and mechanical stress. The Ideal Switch draws low power compared to EMRs, improving system energy efficiency and eliminating the need for heat sinks. It also has a < 10 µs switching time and operates for over 3 billion switching cycles. The Ideal Switches are hermetically sealed using wafer bonding with through-glass copper vias creating miniaturized, chip-scale packages. They are then implemented in a variety of products designed in collaboration with industry-leading customers.

Menlo believes the path from concept to commercialization for advanced electronic technologies demands a tightly integrated product development cycle that spans design, fabrication and testing while engaging both internal and external ecosystems. At Menlo Micro, this cycle is anchored by engineering labs in Irvine, Calif., complemented by its Product Development Center at the NY CREATES NanoTech Complex in Albany, N.Y. Together, these facilities enable rapid iteration between design, fabrication and test for both new technologies and new product introductions.

Menlo extends this innovation framework through collaborations with university research programs, government initiatives, technology networks and direct customer engagement. By co-creating innovation with Tier-1 customers, Menlo ensures the development process is market-driven, tightly aligned with real-world requirements and responsive to evolving system needs. This approach not only accelerates innovation but also helps customers transition smoothly to leverage the benefits of new technologies, particularly in achieving improvements in size, weight, power and cost (SWaP-C).

The Ideal Switch has been successfully implemented and has significant customer adoption across a variety of high-value markets. Menlo highlights its RF switch in communications and 5G/6G, aerospace and defense, test and measurement and medical applications. Menlo's products are critical for testing AI GPUs and envision the extension of the Ideal Switch's usage in autonomous driving. The Ideal Switch is integrated into switched filter banks, antenna tuning and beamforming systems, high-power RF front-ends, low loss switching matrices and EM relays in RF paths.

Menlo Micro's lab ecosystem and collaborative development model drive technology innovation that is co-created with tier-1 customers to shorten time-to-market and deliver meaningful performance advantages to customers across industries. As Menlo Micro's Ideal Switch gains traction throughout the RF and high speed digital industries, it will continue to carry out its mission of "setting a new standard in switch technology."

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