

Accelerate Touch Interface Development with Venntis SimpleTouch™ No-Tuning Technology

For product managers and project engineers, reducing development risk while accelerating time-to-market is a constant challenge. Touch-interface implementation has traditionally required extensive tuning, environmental testing, firmware modifications, and multiple design iterations before reaching production readiness. Venntis SimpleTouch™ No-Tuning Technology fundamentally changes this process.

The Venntis Demonstration Kit has been specifically developed to showcase how quickly engineers can move from concept to prototype and from prototype to production using a common touch-sensing platform that requires no tuning or calibration. Whether the application is a high-resolution trackpad, touchscreen, slider, button array, or custom user interface, the same embedded SimpleTouch firmware and sensing algorithm are utilized across all designs. Only the configuration parameters are adjusted through the I²C interface to match the electrode geometry, resolution, and performance requirements of the specific application.

This architecture dramatically reduces development effort, lowers engineering risk, and significantly shortens project schedules. Product teams can rapidly evaluate multiple user-interface concepts using the demonstration boards, which feature electrode structures ranging from compact 3/8-inch designs to larger 3.5-inch X/Y touch surfaces. Because the underlying sensing technology remains unchanged across all platforms, performance is predictable, repeatable, and easily scalable from proof-of-concept prototypes to high-volume production designs.

The Demonstration Kit consists of multiple PCB designs connected through a simple six-pin interface providing power, ground, I²C communications, interrupt, and reset signals. The touch controller interfaces with a variety of electrode structures through twelve sensor I/O lines, allowing engineers to quickly implement and evaluate different touch configurations without extensive hardware redesign or firmware development.

A key advantage of the Venntis platform is its flexibility in sensor construction. All electrode designs included in the Demonstration Kit can be implemented using traditional PCB copper structures or transparent conductive materials commonly used in display and touch applications. Supported materials include **Indium Tin Oxide (ITO), Silver Nanowire, Carbon Nanotube, and PEDOT-based conductive films**, enabling the development of fully transparent touchscreens and touch surfaces. This flexibility allows manufacturers to select the material best suited to their performance, optical, mechanical, and cost requirements while maintaining the same SimpleTouch operating platform.

Beyond ease of implementation, SimpleTouch technology is engineered to deliver exceptional performance in demanding real-world environments where conventional touch systems often struggle. Products utilizing SimpleTouch maintain reliable operation in the presence of water, films of saltwater, rain, spray, condensation, and even heavy water exposure. The technology is specifically designed to reject false triggers caused by environmental contaminants while continuing to accurately detect and track intentional user interactions.

Users experience consistent and responsive touch performance whether operating the interface with a bare finger or while wearing gloves. This capability enables dependable operation across a wide range of applications, including industrial controls, marine electronics, outdoor equipment, appliances, medical devices, transportation systems, and other products where environmental exposure and gloved operation are critical requirements.

For product managers, this translates into shorter development cycles, reduced validation effort, lower project risk, and faster product introduction. For project engineers, it provides a highly adaptable touch platform that minimizes tuning and optimization activities while supporting a broad range of electrode technologies, interface designs, and environmental requirements.

The result is a touch solution that combines rapid prototyping, streamlined product development, and robust field performance. With a common no-tuning architecture, support for both opaque and transparent electrode materials, and reliable operation in wet and harsh environments, Venntis SimpleTouch technology enables organizations to bring innovative touch-enabled products to market faster, with greater confidence and lower development costs.