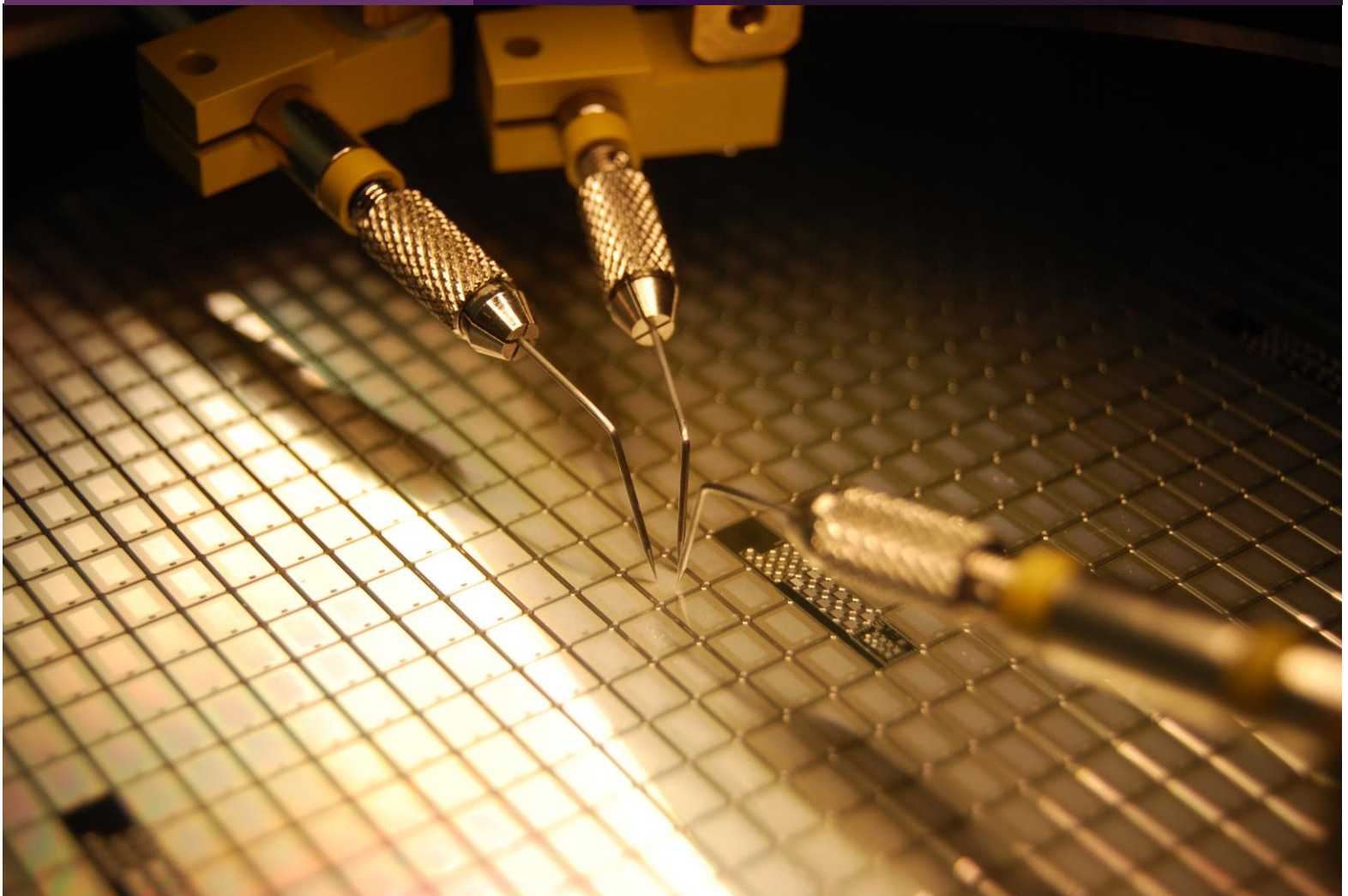


# SIGNATONE POWERPRO

Probe Stations

An all-around high power probing solution  
for the power electronics industry

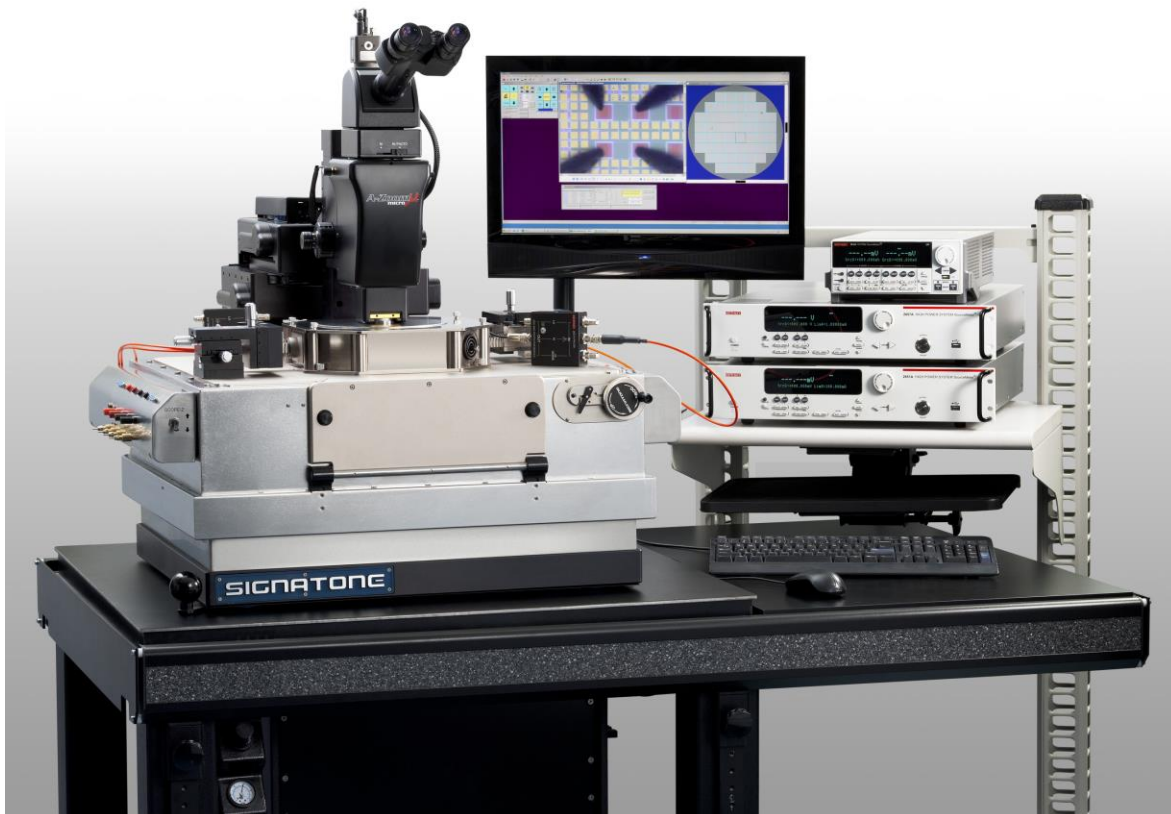


**For years** the only way for power semiconductor scientists and engineers to characterize their devices is at package level. While packaging is an available and mature technology, it invariably incurs cost and time for each batch of devices to be characterized. With Signatone PowerPro solutions, users now can probe their wafer up to 3kV triax/20kV coax, and 450A pulsed/10A DC for off-state, on-state, and current collapse characterizations.

For on-state measurement, the PowerPro provides users the option of pad-level Kelvin probing on one integrated probe holder while minimizing current crowding effect that's inherent in high current probing.

For off-state measurement, the high voltage probe provides integrated tri-axial capability for best high voltage and low current measurement. Both high current and high voltage probes utilize replaceable tips for minimal interruptions to user's measurements.

All PowerPro chucks are specifically designed for safe high power and low noise measurement in ambient or at-temperature operation. Interlock Safety Discharge Box (ISDB) system is an innovative approach that provides added safety and easy transition among floating, grounding, and high voltage bias state of the chuck. Anti-arcing solutions and a reliable interlock-integrated and shielded test environment are all part of the comprehensive PowerPro solutions. Tiered solution packages give users the flexibility to acquire the solution level that fits their needs.

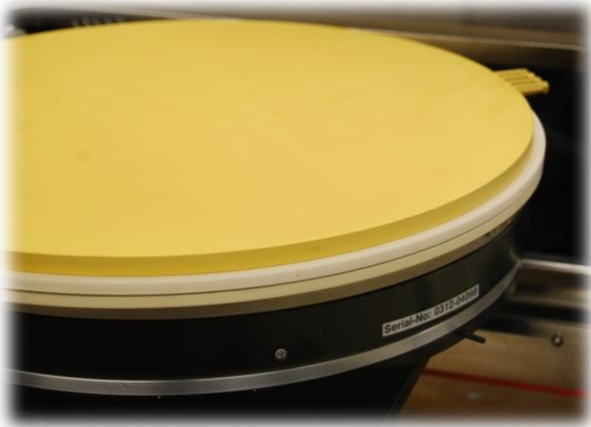


## Station Base

With sub-micron resolution for wafer movement, users can align most any DUT geometry for testing. Linear platen adjustment accommodates a variety of set-up fixtures and probe combinations. The local chamber provides moisture-free environment for cold probing, and can accommodate up to 8 probe manipulators. Shielded measurement environment provides safety for operator and prevent EMI interference of measurement signals. Based on versatility and simplicity design concept, PowerPro boasts superior ease-of-use and best-in-class value and performance.

## Specialty Chuck

PowerPro utilizes chucks that are specifically designed to meet the challenges of probing power semiconductor wafers. Gold plated surface and zoned vacuum patterns provide



PowerPro utilizes gold plated chuck with excellent insulation layers for minimal contact resistance and best high power safety

excellent chuck contact to the backside of thin wafers that is difficult to hold down by regular chucks. Kelvin connections for high current and high voltage signals ensure best results for both on-state and off-state measurements.

## Interlock Safety Discharge Box (ISDB)

ISDB is the latest upgrade to PowerPro's safety feature. The PowerPro safety interlock would turn off instrumentation's high voltage output when its continuity is interrupted. ISDB not only provides a clear visual status of interlock continuity, it also takes the safety precaution one step further; when an interlock circuit is opened, ISDB would immediately discharge the chuck to make it safe for user to handle the wafer. Such discharge event can also be triggered by software at the right moment, such as between die-stepping, to ensure the chuck does not have any residual charge from the previous test when the next test begins.

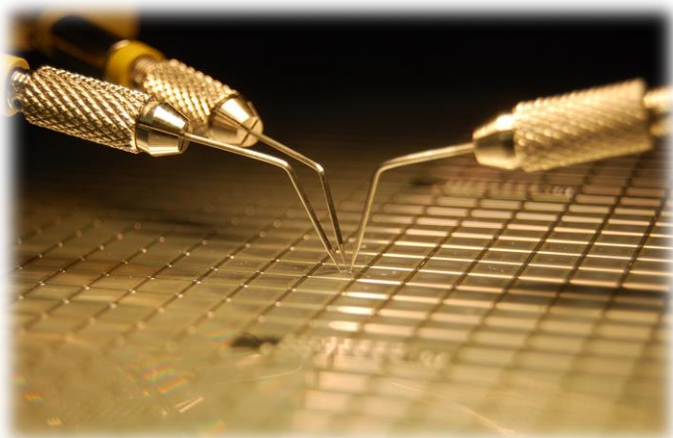


ISDB shows the status of interlock continuity and indication of chuck discharge event



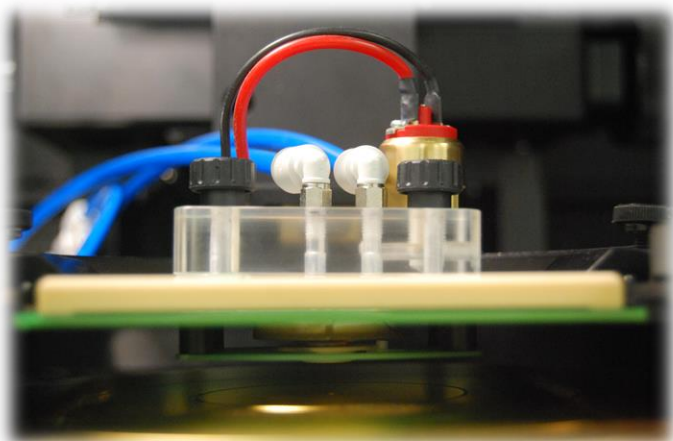
### **High Current Probe HCP-100/HCP-450**

The Kelvin-capable HCP high current probe has a multi-probe design that distributes current among the contact points, and heat sink to remove heat from probe-pad interface to minimize overheating. The design also gives users the ability to have Kelvin access to device at the pad level with minimal hardware investment. Only one set of positioner/probe head is required for each device terminal for Kelvin capability.



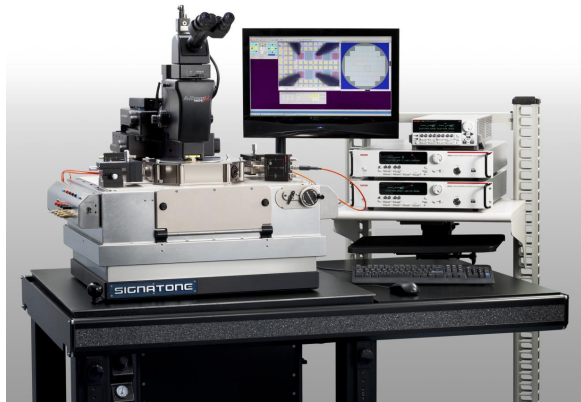
### **High Voltage Probes HVP-TX-3/HVP-CX-3/HVP-CX-10/HVP-UX-20**

The demands of off-state measurements require that signal path, from instrumentation to wafer, supports extreme high voltages, and leakage at nA, or even at pA, levels. PowerPro HVP high voltage probe holders utilize materials with proper isolation resistance and dielectric strength and, together with its triaxial/coaxial design, will ensure operation safety and excellent measurement quality.



### **Anti-Arcing Solutions**

Fluorinert has been widely used as an arc suppression liquid for high voltage tests. However, in some situation a cleaner and cost-effective alternative, such as an anti-arcing probe card, is required. PowerPro supports several anti-arcing solutions that employs a HV probe card, Fluorinert bath, or Fluorinert dispensing kit to suppress arcing during high voltage tests.



Ready to integrate with Keysight, Keithley, or other HV/HC instruments



## PowerPro System Configuration Guide

Typical Probe Station Platforms ‡	WL350	WL210e	CM210/CM170
Temperature Range ‡	Ambient, Ambient to 300°C, -60°C to 300°C	Ambient, Ambient to 300°C, -60°C to 300°C	Ambient, Ambient to 300°C
Chuck Power Handling (3kV triax/20kV coax, 450A pulsed/10A DC)	●	●	●
HVP-CX-3/HVP-TX-3; 3kV coax/triax high voltage probe holder	●	●	●
HVP-CX-10; 10kV coax high voltage probe holder	●	●	●
HVP-UX-20; 20kV high voltage probe holder	●	●	●
HCP-100; 100A Kelvin high current probe holder	●	●	●
HCP-450; 450A Kelvin high current probe holder	●	●	●
CSB Chuck Switch System	●	●	●
Safety Interlock Integration	local chamber	local chamber	safety dark box
System Interface Panels(HV/HC)	●	●	●
Chuck Cabling Kit	●	●	●
SureProbe Precision Package	●	-	-
Contact Verification System	●	○	○
High Power Probe Card Integration	●	●	●

- Feature available/applicable on platform.
- This feature is dependent on meter used.
- ‡ Other platforms/ranges available, please inquire. - This feature is not applicable on platform.

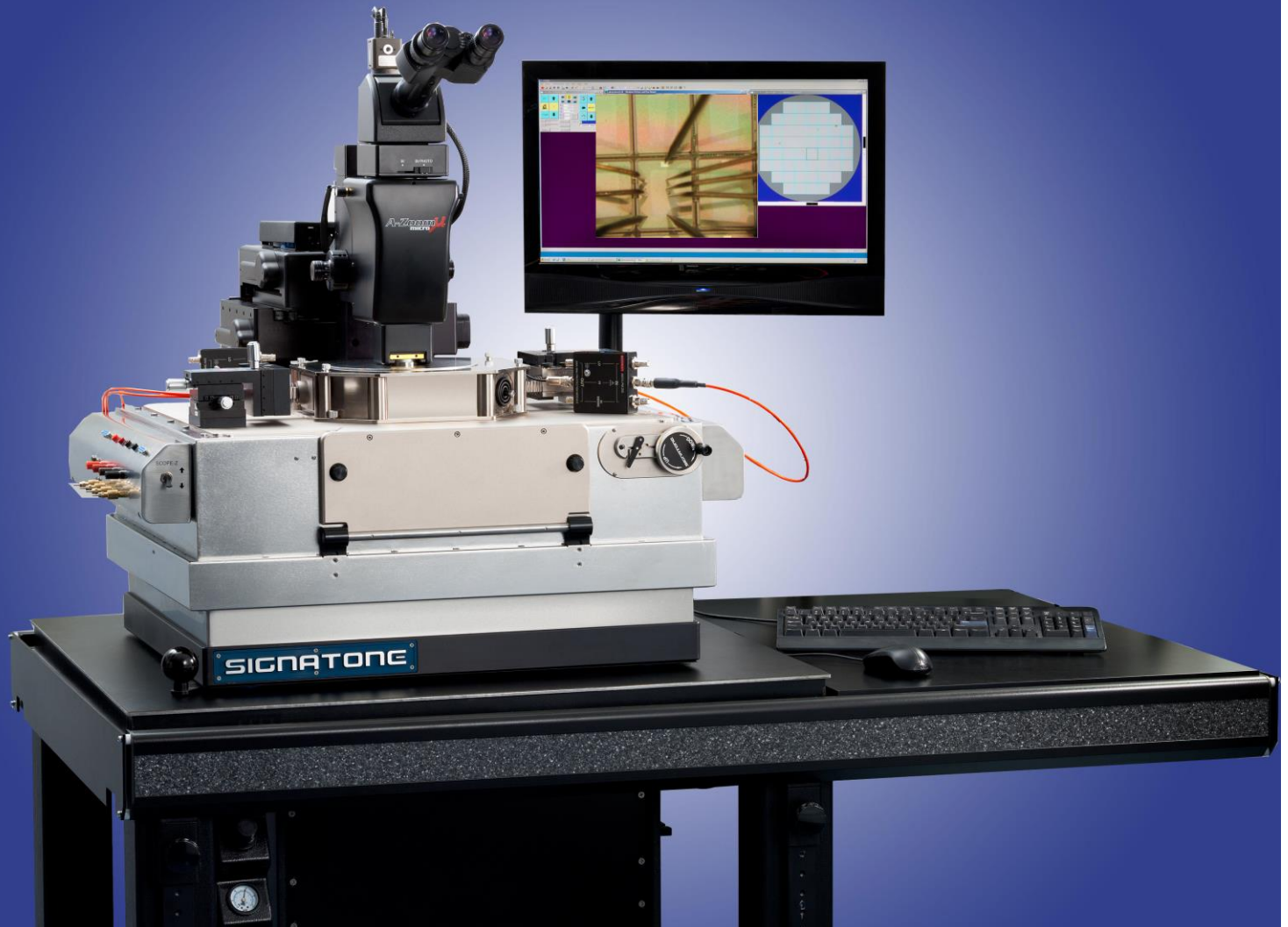
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PowerPro System (WaveLink base with local chamber as shown)

For 3kV/100A power semiconductor characterization

High power thermal chuck -60°C to 300°C

Built-in safety interlock

Manual/Semi-automatic systems available