HUNTRON Products for the Semiconductor Mfg. Industry

Precision Diagnostics for Semiconductor Mfg. Maintenance

The semiconductor manufacturing industry is the cornerstone of modern technology, enabling innovation in countless industries. As printed circuit assemblies (PCAs) become more complex and densely packed, the need for precise, non-invasive diagnostic tools grows exponentially. Semiconductor manufacturing (Mfg.) equipment relies on complex PCAs for motion control, temperature regulation, and process automation. Maintaining these electronics is critical to avoid costly downtime. Huntron's power-off diagnostic solutions, built around Analog Signature Analysis (ASA), robotic probing, and intuitive test development software, help maintenance teams identify faults before they disrupt production and offer a precision-driven approach to fault isolation when disruption occurs.

Key Challenges in Semiconductor Mfg. Maintenance & How Huntron Solves Them

Industry Challenge	Huntron Solution
Equipment Complexity and Legacy Systems	Huntron tools excel in legacy equipment where documentation is limited. ASA-based signature comparison against known-good references, works in-circuit on complex analog/digital boards without needing schematics.
Unplanned Equipment Downtime and High Costs of Failures	ASA allows rapid, safe fault isolation on electronics without risking further damage from power-on testing. Huntrons automation solutions accelerate board-screening to reduce Mean-Time-To-Repair (MTTR).
Limited time during scheduled maintenance windows	Access Probers automate probe placement and test execution, producing consistent results rapidly. Universal fixturing facilitates testing "high-mix" PCA's and centralized test software provide repeatable test routines for efficient scheduled downtime maintenance.
Supply chain vulnerabilities for spares and materials	Accurate component-level diagnostics enable more strategic "repair vs. replace" decisions to extend the life of equipment. This reduces dependency on spares and supports efficient repair depot processes.

Huntron Features and Benefits

- Huntron tools accelerate troubleshooting, providing a targeted area to look for issues on PCA's and reduce equipment downtime.
- Completely customizable test routines can be integrated with existing test procedures.
- Automated micron level probing eliminates the error and time factor from manual hand probing for diagnostic or parametric testing, while also reducing repair time.
- Multiple options available for training and onboarding maintenance teams quickly onto Huntron systems as well as world-class support.

New Perspectives: Unlocking Success for the Semiconductor Mfg. Maintenance

Huntron products offer alternatives to the traditional fault-repair process and are particularly effective when integrated into a broader maintenance strategy. Its product suite supports preventative maintenance and fault prediction, helping identify issues before they occur. The open architecture system allows users to expand testing capabilities with external instrumentation and choose solutions that best fit their needs.

Let Huntron Help You Be Successful in Test and Repair of Semiconductor Mfg. Equipment!

Huntron Products & Applications for Semiconductor Manufacturing

Huntron Tracker – Models: 2800, 2800S, & 3200S

Application: The Huntron Tracker is used in performing Analog Signature Analysis (ASA) to safely diagnose faults on PCAs. This is especially important for devices where functional power-on testing could cause further damage. The Tracker helps technicians identify component-level faults without requiring circuit diagrams, even on mixed signal boards. It supports preventative maintenance by comparing baseline electronic signatures and can detect hidden, marginal, or intermittent faults missed by conventional testing. This non-invasive method helps protect sensitive circuitry, reduce diagnostics time, and streamline iterative processes.

Description: The Huntron Tracker is a benchtop diagnostic tool that uses power-off Analog Signature Analysis to identify component-level faults on PCAs.

Tracker 3200S

Tracker 3200S is Huntron's most advanced model, offering expanded ASA capabilities and flexibility. It includes two 64-pin IDC connectors and supports automated ASA testing when integrated with the Access 2 Prober.

Tracker 2800S is a durable entry-level model suitable for general troubleshooting and includes two 40-pin IDC connectors for scanning connectors and ports using custom cable interfaces.

Tracker 2800 is a durable entry-level model suitable for general troubleshooting.

Huntron Access Prober – Models: Access 2, DH2

Application: Precision and repeatability are non-negotiables in testing complex PCAs. Access Probers use micro-stepping motors and linear encoders to place probes on the device under test with micron-level accuracy. These systems automate the testing process, allowing technicians to focus on other tasks while tests are performed independently. Access Probers are optimized for low-volume, high-mix testing environments, making them suitable for repair depots and onsite maintenance teams. Repeatable test profiles developed in Workstation, simplify switching between different boards. These systems can also be configured to work with external electronic measurement instruments such as oscilloscopes, digital multimeters (DMMs), and LCR meters, enabling integration with existing workflows.

Description: The Access Probers automate the testing of PCAs, achieving speeds up to ten times faster than manual methods. Using Huntron Workstation, a built-in camera is used to target probing locations, when CAD files are not available. Maintenance is straightforward, requiring occasional lubrication of the axis rails.

Access 2 Prober

Access 2 Prober includes a single flying probe head for benchtop testing. When paired with the Tracker 3200S, it enables automated, power-off ASA testing in Workstation.

Access DH2 model features two flying probe heads and can test across components with a minimum spacing of 50 mils (0.050 inches / 1.27 mm). It is housed in a mobile cabinet and includes integrated ASA testing. This system can be configured for 4-wire measurements.

Huntron Software – Huntron Workstation 4.3

Application: **Huntron Workstation** is a model-driven platform that allows users to develop and perform tests consistently while automatically storing results. It supports integration with other electrical measurement tools, enabling centralized management of test procedures and data. CAD driven test development reduces test development time to further streamline processes.

Description: **Huntron Workstation** is the central software platform used with Huntron Trackers and Access Probers. It provides a unified system for managing and executing test procedures. Built on a database foundation, Huntron Workstation is reliable, user-friendly, and adaptable to various testing needs.