

Precision Diagnostics for Electronic Design Validation

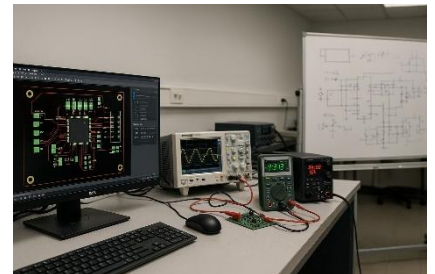
In the field of Electronic Design Validation (EDV), bridging the gap between design conception and real-world application costs time and money. Engineers, technicians, and QA face an array of challenges in verifying the functionality, safety, and reliability of complex circuit designs before production. Undetected faults, risks from conventional testing, and complexity are just a few of the factors that can add cost to the EDV process. Huntron provides proven, non-destructive, power-off diagnostic tools that help detect faults precisely, automate testing, and improve operational efficiency.

Key Challenges in Electronic Design Validation and How Huntron Solves Them

Industry Challenge	Huntron Solution
Identifying undetected, marginal, or intermittent faults	Using Analog Signature Analysis (ASA) and comparative testing, Huntron Workstation software can keep track of baseline signatures and identify changes that could indicate problems yet to be discovered.
Design complexity and test creation	Huntron CAD tools are a time-saving test creation utility that drastically reduces the time required to create and run a test. Using supported output formats from your own CAD layout files– the full BOM, netlist, and probing locations can be imported directly into Huntron Workstation.
Damage due to testing	Huntron Trackers utilize ASA, a power-off test method. They apply a current-limited AC test signal across two test points with the electrical response depicted in a V/I curve trace. ASA can be applied to check for damage between validation testing processes.
Preparing the Device Under Test (DUT) for measurement.	Huntron Access Probers can integrate with supported digital multimeters (DMMs) and oscilloscopes through Huntron Workstation. The open architecture model provides capability to add support of additional external instrumentation. This expands the validation workflow by enabling automated parametric measurements, waveform capture, and comparative analysis – directly from the Access Prober and Huntron Workstation. Avoid hand soldering test leads by probing with an Access Prober.

Huntron Features and Benefits

- Present day PCA's continually get smaller and more complex. Automated micron level probing eliminates the error and time factor from manual hand probing for diagnostic or parametric testing.
- Huntron tools accelerate troubleshooting, providing a targeted area to look for issues on a printed circuit assembly (PCA) and reduce equipment downtime. Automated testing via Access Probers further reduces this downtime and allows for accelerating the repair process.
- Completely customizable test routines can be integrated with existing test procedures. Huntron Workstation supports embedded control of external test instruments, including compatible digital multimeters (DMMs) and oscilloscopes—allowing electrical measurements such as resistance, voltage, and waveform capture to be incorporated alongside ASA testing within a unified workflow.
- Multiple options available for training and onboarding onto Huntron systems as well as world-class support.



New Perspectives: Unlocking Success in Electronic Design Validation

Huntron products offer alternatives to the traditional validation workflow. The product suite supports prognostics and fault prediction. Use ASA testing to establish baseline signatures for an electronic design to detect and respond to changes in electrical behavior. The open architecture system allows users to expand testing capabilities and choose solutions that best fit their needs.

Let Huntron Help You Be Successful in Electronic Design Validation!

Huntron Products & Applications for EDV

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

Application: The [Huntron Tracker](#) is used in Electronic Design Validation to isolate faults on printed circuit assemblies (PCAs) that could be introduced via power-on testing, design revision flaws, or incorrect component placement. The [Tracker](#) can detect faults that don't manifest in the overall functionality of the device and get missed by traditional test methods. This is important during validation as decisions regarding balancing cost, efficiency, and manufacturability are considered based on data collected from the validation process. A [Tracker](#) can be used to verify prototype functionality before running a potentially damaging validation test and used afterwards to reveal any changes in electrical behavior.

Description: The [Huntron Tracker](#) is a benchtop diagnostic tool that uses non-destructive power-off Analog Signature Analysis (ASA) to identify component-level faults on PCAs.

[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: Probing small, densely populated PCA's with hand probes is a time consuming and error prone endeavor. In electronic design validation, time is an important factor and will drive up costs. [Access Probers](#) use micro-stepping motors and linear encoders to place probes on the device under test with high precision. Operating 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 electronic design validation. These systems can also be configured to integrate with external electronic measurement instruments, such as oscilloscopes, digital multimeters (DMMs), and LCR meters; enabling integration with existing workflows. PCA trace resistance and other 4-wire parametric measurements can be taken when a [Dual-Head Access Prober](#) is configured appropriately.

Description: The [Access Probers](#) automate the testing of printed circuit assemblies (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](#) includes a single flying probe head for benchtop testing. When paired with the [Tracker 3200S](#), it enables automated, power-off Analog Signature Analysis (ASA) testing in [Workstation](#).



[Access DH2](#) model features two flying probe heads, a built-in Tracker, 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 Kelvin measurements.

Huntron Software – Huntron Workstation 4.3

Application: [Huntron Workstation](#) enhances electronic design validation by automating diagnostic testing and storing tests locally. Huntron CAD tools speed up test creation through importing PCB layout drawings. Support for capturing and comparing measurements using embedded control of external instrumentation easily integrates into existing workflows. Consistent and repeatable test profiles facilitate easily switching between design validation projects.

Description: [Huntron Workstation](#) is the central software platform used with [Huntron Trackers](#) and [Access Probers](#) to perform ASA based tests. 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.