

"Manual probing of circuit cards is inherently error prone..."*

HUNTRON
ACCESS
Automated Probing Station

solves...

...manual dexterity challenges...

...measurement uncertainties and errors...

...consistent contact pressure...

... probe placement problems.

HUNTRON
Access Explore Discover

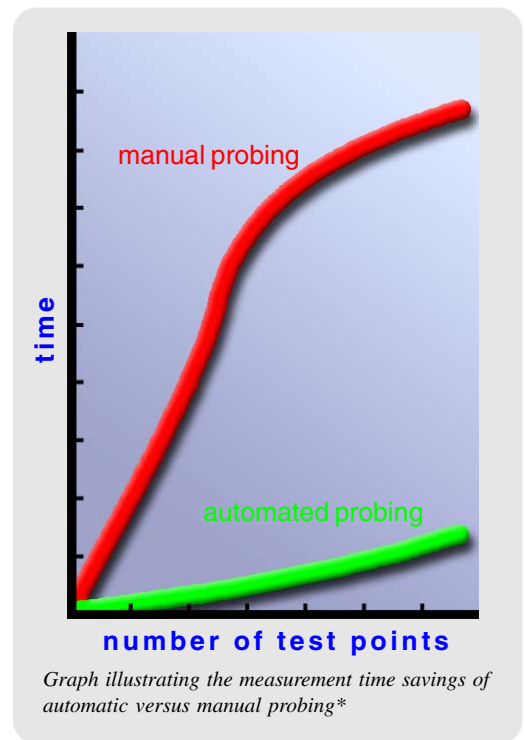
Manual Probing

Placing a test probe on a powered printed circuit board assembly has traditionally been performed by hand. Taking test measurements such as voltage, frequency and resistance was simply a matter of connecting the appropriate test instrument to the test point and noting indicated values. With the advent of modern surface-mounted technology, interfacing to these test points has become increasingly difficult. Test points are smaller and closer together making the task of locating the test point accurately a more complicated procedure. The possibility of probing the wrong test point and the risk of PCA damage due to accidental misprobing becomes a test of manual dexterity. Additionally, the time needed to

manually test specific points on a PCA with surface-mounted technology becomes a serious burden on engineering resources.

Automated Probing

Automating the process of probing test points on a printed circuit assembly is a safe and extremely accurate alternative to manual probing. There is also a significant time savings to be realized when running the same test process automatically versus manually.



Open architecture guided probing station

The Huntron® Access Automated Probing Station allows you to apply your application and test requirements to a robotic platform for automated test point access. Using the standard built-in test probe or a custom test probe, the Huntron Access adds flying probe technology to your new or existing test equipment.

Probing test points manually can be time consuming as well as subjecting a powered-up PCA to possible damage caused by shorting pins with the test probe. Tasks that were previously accomplished with time consuming manual methods can now be automated. 20 micron accuracy ensures reliable and repeatable probing of densely packed PCAs and the smallest surface mounted components. The high-resolution color camera assures a clear view of the test points for correct probe placement. The end result is a safer, more accurate and significantly faster test routine or troubleshooting task.

The Huntron Access Automated Probing Station is designed to be used with external test equipment and software such as National Instruments PXI-based high performance, virtual instrumentation systems powered by NI LabVIEW™ or LabWindows/CVI™. The Huntron Access is a flexible robotic test platform for interfacing your test equipment to test points on a printed circuit assembly.

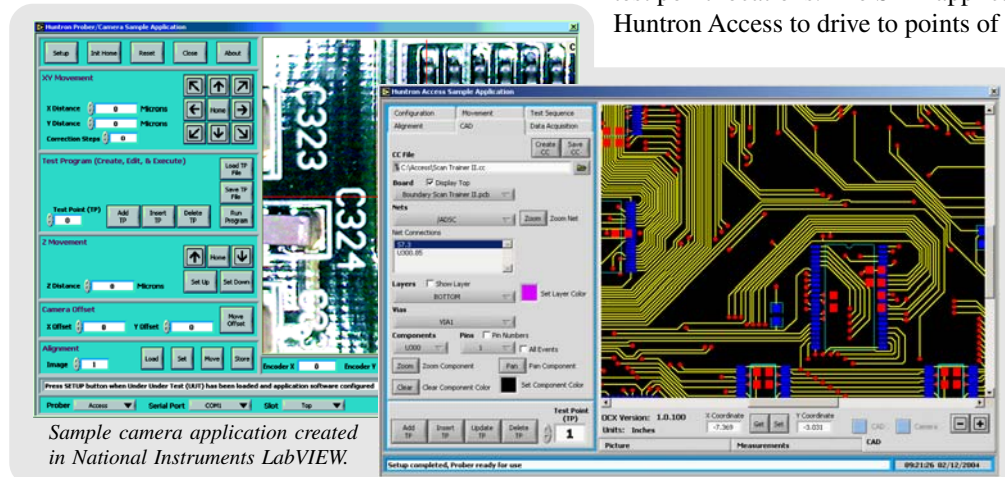
The Benefits of Automated Probing

- Significantly reduce the time needed to interface to test points when compared with manual methods
- Extremely accurate and repeatable probing therefore reducing the possibility of testing the wrong point
- Greatly reduce the risk to the PCA-under-test caused by shorting live pins
- Reduce the burden on engineering resources by freeing them from manually intensive tasks

The Combined Strengths of Huntron, National Instruments and Router Solutions

The Huntron Access Software Development Kit (SDK) integrates the versatility of Router Solutions CAD tools and the power of National Instruments LabVIEW for instrumentation control. The Software Development Kit provides a quick start for creating PCI or PXI-based custom test sequences.

Based on Router Solutions CAMCAD, the embedded Huntron CAD OCX displays board layout information and provides part and test point locations. The SDK application links the CAD OCX and the Huntron Access to drive to points of interest automatically.



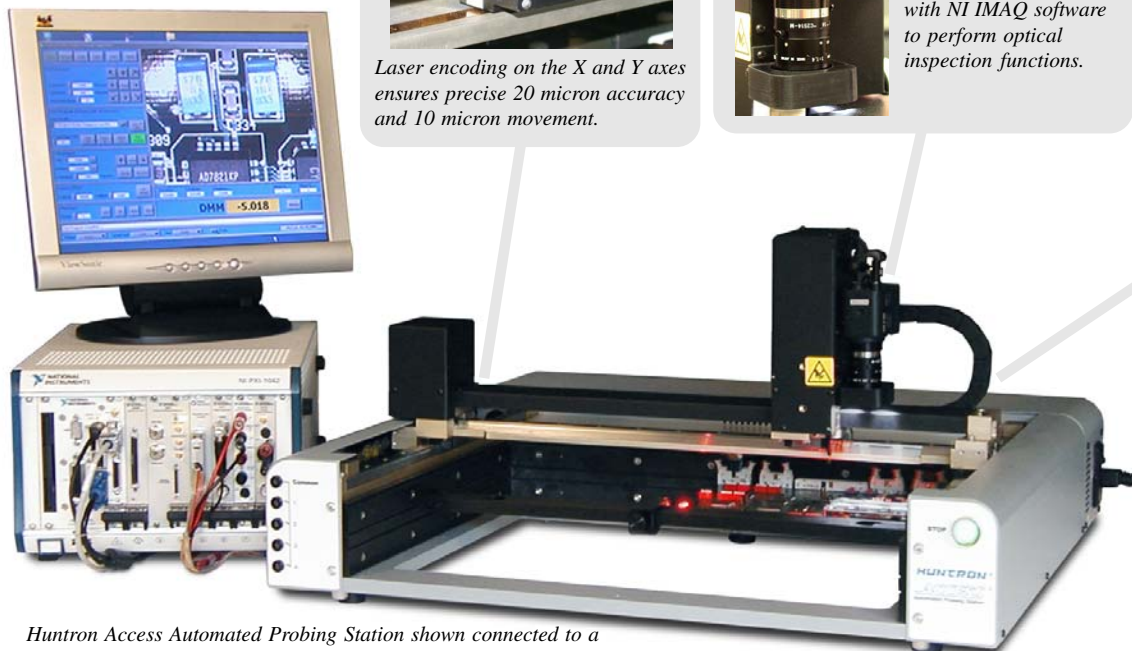
Sample camera application created in National Instruments LabVIEW.

Huntron Access SDK application created in LabVIEW utilizing Router Solutions for PCB layout display.

The Huntron Access SDK application, developed in LabVIEW, includes Express VIs, IMAQ Vision for auto-alignment and control of NI PXI DMM, scope, and switch cards.

Test sequences can be created using the SDK with complete control of test point locations as well as executing the sequence in a probe or camera mode.

The SDK application provides a base for developing complete test solutions or enhancing the capabilities of existing test applications.

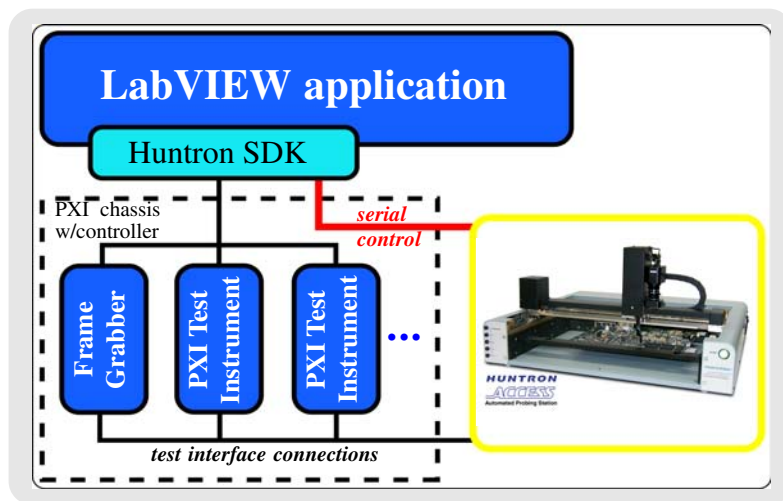


Huntron Access Automated Probing Station shown connected to a National Instruments PXI-based instrumentation chassis

Huntron Access Automated Probing Station with National Instruments and Router Solutions

- Interface to industry standard high performance, virtual instrumentation systems
- Huntron Access LabVIEW drivers are included
- Extract test locations from CAD files
- Link the CAD view to probe position and instrumentation control

Automating Test Applications with a Huntron Access Prober



The Huntron Access Automated Probing Station is designed to be robust and sized to meet most test specifications. A cover plate can be removed from the base to accommodate taller components or assemblies on an inverted PCA and allow access to the PCA from underneath. The color camera provides a high resolution view of the device under test. The capabilities of this hardware combined with software tools from Huntron's strategic alliance partners allow you to create many different and unique applications. Guided probing, measurement, stimulus and fault injection, automated optical inspection and physical switch activation are possible using this flexible platform. Multiple test functions can be used within a single test application such as adding optical recognition to an automated keypad test.



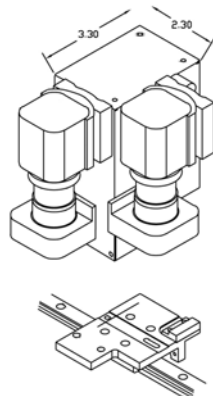
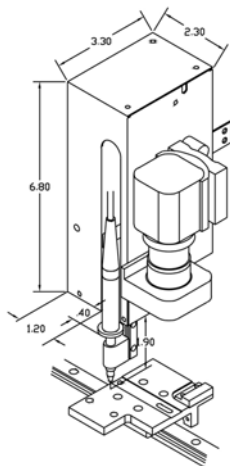
Huntron Strategic Alliances

Customize the Z Axis Assembly

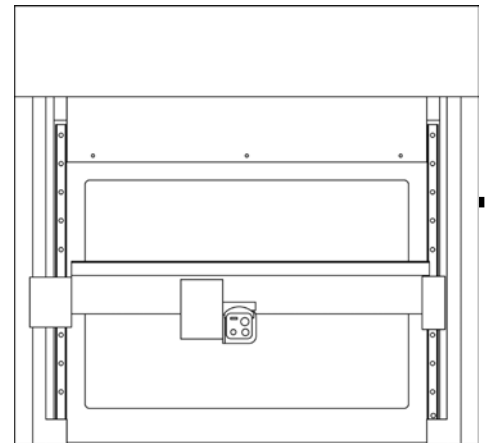
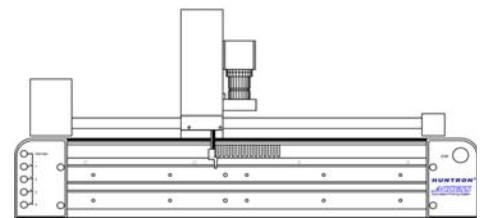
The Z axis assembly of the Huntron Access Prober is design to be easily removed.

Custom

Z axis assemblies can be installed to fit a variety of needs including high-bandwidth oscilloscope probes, RF probes, temperature sensors, mechanical plungers for activating keypads and multiple camera arrays.



Customized Huntron Access probe heads



SPECIFICATIONS

Linear Speed	5"/sec (12.7cm/sec)
Probing Accuracy	+/- 20µm (0.0007874")
Min. step resolution	10 µm (0.0003937")
Vision system	CCD 811 x 508 pxl. color
Light source	Adjustable white LED array
Lens system	25mm "C" mount with adjustable focus and aperture
Frame Grabber	Color PCI or PXI bus card with 754 x 480 pixel (NTSC, RS-170) max. resolution
Linear encoder resolution	0.0003937" (10µm)
Micro-stepping	Auto-adjust; 4000 micro-steps per revolution
Mechanical	
Belts	6mm steel reinforced
Raceways	Steel with linear bearings
Max. PCA-under-test size	19.4" W x 14"D (49.3cm W x 35.6cm D)
Max. probing area	15.3" W x 12.9"D (38.9cm W x 32.6cm D)
Max. component height	2.375" H (6.03cm H)
Max Z travel	2.21" (5.6cm)
Computer interfaces	RS232 and PCI or PXI bus
Power Requirements	
Line Voltage	115VAC or 230VAC
Frequency	50 or 60Hz
Power	100 Watts max.
Dimensions	26.5" W x 13" H x 24.5" D (67.3cm W x 33cm H x 62.3cm D)
Weight	63 lbs (28.6kg)
Warranty	1 year, limited

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* source: "Diagnostic Testing of Circuit Cards with Robotic Probers" by Joseph Chirnitch and Aaron M. Dalton
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