

HAPS

A 8" to 12" probe station with excellent stability and reliability.



Application

DC, RF/mmW Tests;
MEMS, NEMS, Optoelectronics Tests;
,etc.

Features

- Application oriented – Kitstart test kits provide know-how test methods and techniques for various applications.
- Highly stable and accurate – Built on a granite base with <5 micron planarity, which provides the stability and accuracy crucial to highly reliable test results.
- Slimscope and superscope – Slimscope for tests requires space besides the microscope (mmW test, etc.)and Superscope for high magnification requirements .
- Cost-effective – The most cost effective system among the products of the same grade.

Description

In order to acquire accurate and reliable test results in the cutting edge tests, one of the key factors is to use a probe station system with ultra mechanical accuracy and stability.

HAPS is built on a granite base with less than 5 micron planarity. This design not only assures the high planarity in X-Y motion but also provides a rigid and stable platform for high accuracy tests. To achieve positioning accuracy, we use precise micrometer heads to drive spring loaded X-Y axes. With an air bearing X-Y stage, user will be able to move the X-Y in coarse positioning

HAPS Probe Station

smoothly and quickly, thus greatly reducing set up time and improving test efficiency. One of the most common applications of HAPS is millimeter wave device characterization. The accuracy and stability act as an important role in protection of fragile and expensive mmW probes while producing reliable test results.

TWO Set Ups for HAPS

HAPS with a slimScope

is generally set up for High-performance RF, multi-contact/mixed signal probing, Single-ended broadband/mmWave, THz, source/load pull, RF noise probing. All these measurements requires the system to be ultra accurate and stable fo ensure reliable measurement output. SlimScope and Superscope is interchangeable.



HAPS with a Superscope

is generally set up for probing on tiny geometric structures of wafer level reliability tests, failure analysis, high power tests, etc. HAPS' intuitive manipulation enables users focus more on their measurements rather than manipulation. SlimScope and Superscope is interchangeable.



Specifications

Chuck -standard

Diameter	8" to 12"
Material	Stainless Steel
Plating	N.A.
Planarity	<5μm@Ambient Temperature

Chuck stage -AccuStage

X-Y travel range (Coarse)	8" to 12". Air bearing for smooth coarse movement
X-Y travel range (fine)	25mm*25mm
Resolution	1μm
Theta travel range (fine)	±9°
Theta resolution	0.0001°/deg
Theta travel range (coarse)	360°
Z travel range	10mm
Resolution	1μm
Z Contact and Separation	0~5mm
Z repeatability	<1μm

Platen -standard DC application

Material	Steel, Ni-Plated.
Space	For up to 10 DCP100 or 2 RFP100-mmW. Can be customized for more positioners.
Mounting Compatibility	Magnetic and vacuum mounting.
Height Adjustment	45mm
Repeatability	<1 μ m

Microscope

Stereo Microscope	Steel, Ni-Plated.
SlimScope	12X Zoom
Superscope	20X~2000X

*Three types of microscopes are available upon request. Magnifications of SlimScope or Superscope will vary according to objective lens.

Microscope Mounting & Movements

Rigid Bridge for Stereo microscope, Superscope or SlimScope

X-Y travel range (fine)	25mm*25mm, larger travel range (50mm) available upon request.
Resolution	1 μ m
Pneumatic lift	40mm
Manual lift	50mm

Electrical Measurement Accuracy (Current)

Part #	Range	Accuracy
BIV	1 μ A	rdg+10nA
COAX	1nA	rdg+10pA
COAX-PIV	1nA	rdg+10pA
TRIAx	10pA	rdg+100fA
TRIAx-FemtoProbe	1 ~ 10pA	rdg+10fA

Electrical Performance (C-V measurement)

Current leakage	<10fA
Frequency	>150MHz
Capacitance	<10fF
Impedance	50 Ohm

*Capacitance is measured by Keysight 4980A LCR. Probe station set up: IPS-COAX-AS-Stereo, DCP100(2SET), CPA-10(2SET) with 10 micron probe tips on a gold pad. 1 meter coax cable, 4-terminal-pair connection. Room Temperature 25 $^{\circ}$ C, RH<45%.

Ordering Information

HAPS-SlimScope-5X

Probe Station with AccuStage, SlimScope(5X objective).
Other magnifications available upon request.

HAPS-SuperScope-2/10/20X

Probe Station with AccuStage Superscope(2X, 10X, 20X objective).
Other magnifications available upon request.

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