

# IPS

A 4" to 12" cost-effective  
probe station with upgrade  
capability.



## Application

DC, RF Tests;

MEMS, NEMS, Optoelectronics Tests;

,etc.

## Features

- Application oriented – Kitstart test kits for various applications.
- Cost-effective – Users can start with a very cost-effective set up.
- Modular design – Various modular options allow user to upgrade the system easily.
- Unique X-Y– Air bearing stage for fast movement and micrometer heads for accurate X-Y movement.

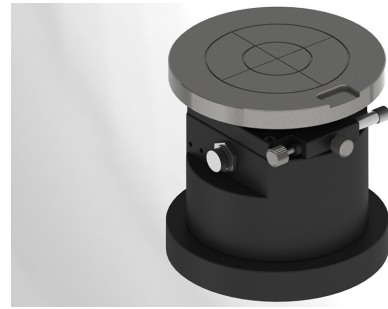
## Description

Probe stations are very expensive and durable lab equipment. Many users only have very limited budgets at the beginning but their test requirements could change over time.

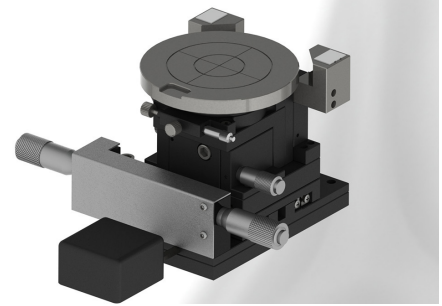
IPS probe station allows you to start with a probe station with very competitive price. You can upgrade the system easily as test requirements change. With the modular design, you simply choose from various chuck options, microscope options and test kits. The ease of upgrade capability protects your current investment for future need.

## Modular option for chuck stage

**SimpleStage** – SimpleStage has only X-Y coarse positioning and theta rotation. Its smooth and fast X-Y adjustment is driven manually on a ergonomic air bearing stage. This set up is perfect for users with very limited budget but a stable probe station system is needed. It can be upgraded to AccuStage without modifications to other parts.



**AccuStage** – Besides the air bearing stage, AccuStage has fine X-Y-Z and theta adjustment. They are all spring loaded and driven by precise micrometer heads. This set up not only assures positioning accuracy but also reduces system set up time, thus thriving measurement efficiency.



## Variety of optical options

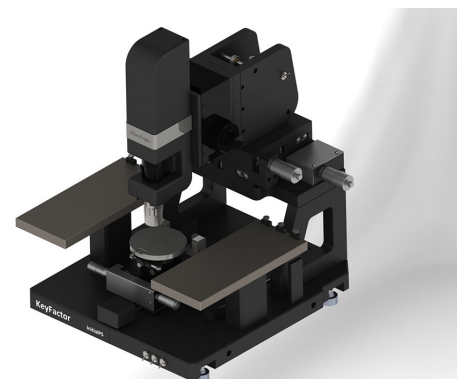
**Stereoscope** – IPS' stereoscope is a Motic SMZ171 microscope. It has a magnification of 100X with 110mm working distance. This is ideal for basic I-V/CV probing and RF probing. InitialPS-Stereo can be upgraded to superscope Superscope or SlimScope set up without modifications to any other parts, which means the shortest lead time and the best price to meet higher measurement requirements.



**Superscope** – Superscope has a turret for 4 M Plan APO lens. The magnification range could be 20X~2000X with 2X~100X objectives. This system is generally set up for probing on tiny geometric structures of wafer level reliability tests, failure analysis, high power tests, etc. InitialPS' intuitive manipulation enables users focus more on their measurements rather than manipulation.



**SlimScope** – SlimScope has a 0.58X~7X Zoom lens. When used with 1X microscope, it has 82mm working distance. It is also compatible with M Plan APO objective lens for higher magnification application. Generally InitialPS with a SlimScope is set up for High-performance RF, multi-contact/mixed signal probing, Single-ended broadband/mmWave, THz, source/load pull and RF noise probing.



## Specifications

### Chuck -standard

Diameter	4" to 12"
Material	Stainless Steel
Plating	N.A.
Planarity	<5 $\mu$ m@Ambient Temperature

### Chuck stage -SimpleStage

X-Y travel range (Coarse)	4" to 12". Air bearing for smooth coarse movement
Material	$\pm 9^\circ$
Theta resolution	0.0001 $^\circ$ /deg
Theta travel range (coarse)	360 $^\circ$

### Chuck stage -AccuStage

X-Y travel range (Coarse)	4" to 12". Air bearing for smooth coarse movement
X-Y travel range (fine)	25mm*25mm
Resolution	1 $\mu$ m
Theta travel range (fine)	$\pm 9^\circ$
Theta resolution	0.0001 $^\circ$ /deg
Theta travel range (coarse)	360 $^\circ$
Z travel range	10mm
Resolution	1 $\mu$ m
Z Contact and Separation	0~5mm
Z repeatability	<1 $\mu$ m

### Platen -standard DC application

Material	Steel, Ni-Plated.
Space	For up to 6 DCP positioners. Can be customized for more positioners.
Mounting Compatibility	Magnetic and vacuum mounting.
Height Adjustment	N.A. Can be customized with 45mm travel range.

### 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

Boom Stand for stereo microscope	Pivoted structure for stereo microscope.
Rigid Bridge for Superscope or SlimScope	
X-Y travel range (fine)	25mm*25mm, larger travel range (50mm) available upon request.
Resolution	1 $\mu$ m
Pneumatic lift	40mm
Manual lift	50mm

## Electrical Measurement Accuracy (Current)

Part #	Range	Accuracy
BIV	1 $\mu$ 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 C , RH<45%.

## Ordering Information

IPS-BIV-AS-Stereo	4~12 inch chuck IPS probe station with AccuStage and 100X stereo microscope. Basic I-V measurement package.
IPS-COAX-AS-Stereo	4~12 inch IPS probe station with AccuStage and 100X stereo microscope. Optimized I-V/C-V, PIV measurement package.
IPS-TRIAx-AS-Stereo	4~12 inch chuck IPS probe station with AccuStage and 100X stereo microscope. High resolution triax set up for semiconductor characterization systems.
IPS-FA	4~12 inch chuck IPS probe station with AccuStage and Superscope. High resolution triax set up for semiconductor characterization systems.
DTP100	5 micron accuracy micropositioner for stable and backlash free probing.
DCP100	2 micron accuracy micropositioner for stable and backlash free probing.
HPP100	0.5 micron accuracy micropositioner for submicron probing.
RFP100	3 micron accuracy micropositioner for RF probing.

## Ordering Information

IPS-MB	Optional rigid and stable mounting bridge for microscopes. Offers a high rigidity platform for microscopes.
CA-SSMC-BNC	Coax cable assembly for LCR meters. 1/2/3 meters available upon request.
CA-TRIAX-SMA	High resolution measurement triax cable assembly. 2m, TRIAX to SMA connector.
CAM-MP200-HDMI	High resolution camera with snapping, recording and size measuring. HDMI connector to LCD monitor.
CAM-MP200-VGA	High resolution camera with snapping and recording. VGA connector to LCD monitor.
VIT-TableTop	Table top vibration isolation table.

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C/ SEPTIEMBRE 31 28022 MADRID  
Tel. 91 3000191 [www.idm-instrumentos.es](http://www.idm-instrumentos.es)  
[idm@idm-instrumentos.es](mailto:idm@idm-instrumentos.es)

### KeyFactor Systems, Inc.

[www.keyfactorsystems.com](http://www.keyfactorsystems.com)  
[sales@keyfactorsystems.com](mailto:sales@keyfactorsystems.com)  
[technical-support@keyfactorsystems.com](mailto:technical-support@keyfactorsystems.com)

#### U.S.

Add: 8825 53 AVE Elmhurst, New York, United States.  
Tel: +1(347) 994-9951

#### China

Add: 5th FL, Sohovark, Industrial Rd. South, SSL, Dongguan.  
Tel: +86(769)2223-8503  
Fax: +86(769)2223-0701