



Athena

BY TECHNOPROBE



3x faster optical alignment

Flying probe loopback

6 μ m V-align spec

600 kg force

3x faster wire check

Optical planarity measurement



Redefining performance in Probe Card analyzing

Athena is a new generation metrology tool designed to perform better POR optical, mechanical, and electrical measurements on Probe Cards.

Configuration options:

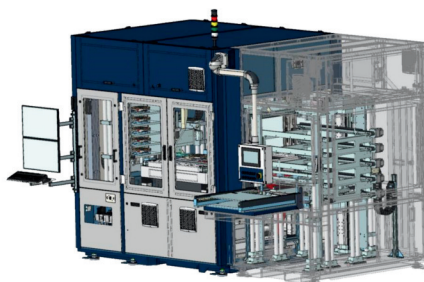
Probe Card analyzer with debug station

Enables deep debug on Probe Cards and 100% tests. Compatible with legacy motherboards.



Probe Card analyzer with autoloader

Ideal for HVM throughput, enables statistical data collection on several Probe Cards.



Highlights

- High-precision optical probe position measurement in X, Y, and Z including planarity
- Fine-pitch probe measurement, as low as 25 μm
- Multiple probe types in single array
- Flexible, feature-rich vision system for wide variety of probe types
- Probe tip 3D morphology
- Probe free-tip-length measurement
- High channel count: 9216
- Loaded and unloaded electrical planarity measurement
- DC loopback testing
- Board-only testing
- Contact resistance stability across multiple probe tip metallurgies
- High-frequency testing (AC loopback)
- High array force up to 600 kg
- Full-wafer 12"/300 mm
- Closed-loop stages with 0.01 μm encoders
- High accuracy and stability: demonstrated tool-to-tool correlation across fleet
- Interchangeable interface design: compatible for probecards of any tester platform (V93k, Ultraflex, HDMT...)
- Fully automated: choose any suite of tests
- Test data analytics
- Option: multiple-probecard autoloader, or debug station



Performance benchmark

Measurement	Athena Capability (σ)	Comparison to Legacy Analyzer
Optical Alignment @WLI	X/Y = 0.16 μm Z = 0.15 μm	2x better N/A
LEP@Plate	0.3 μm	2.75x better
Cres@Plate	0.005 Ohm	5x better
Array Force	0.25 kg	N/A

Measurement capabilities

Optical alignment by 3D inspection system (WLI, white light interferometer)
Unloaded electrical planarity by post
Loaded electrical planarity by plate
Contact resistor versus conductive plate
Leakage at overtravel and without load
Test of capacitors value in farad
Test of resistors value in ohm
Electrical continuity check and path resistance measurement on loopbacks within ST or PCB
Capacitor leakage at overtravel and without load
Probe Card load in overtravel

Throughput benchmark

Measurement	Athena Acquisition time	Legacy Acquisition time
Optical Alignment @WLI	90 min	240 min
Cres@Plate	90 sec	15 min
Leak@Free	3 min	5 min
CAP	4 min	20 min
UEP	> 7 p/sec	2 p/sec

Dimensions:

