Park Systems
Leading innovation in emerging nanoscale microscopy and metrology technology

www.parksystems.com
We are who we serve:
Our customers and their applications

Products from Park Systems are used by some of the most notable researchers and corporations across the globe. We strive to meet the needs of our clients by constantly working to create the most accurate, easy to use nanoscale microscopy technology available.
Where we are headed

As nanoscale research in the semiconductor and hard disk industries grows, the global market for emerging nanoscale microscopy and metrology technology grows with it. Today, researchers and engineers continue to demand better and more effective AFM technology to increase their productivity and the quality of their work. The worldwide microscopy industry is expected to reach a value of $6.2 billion by 2018 and grow by nearly 28% annually, with atomic force microscopy as one of the leading growth factors. [1]

The people at Park Systems work each day to live up to the innovative spirit of the company’s origins. Although our history in AFM technology is illustrious, we have never stopped innovating, revising, and developing new technology. Our products are built with today’s most innovative features and technologies, and we are constantly at work developing new functionality that will allow engineers and researchers to be more precise and more efficient. At Park, we create best-in-class tools that allow our customers to focus on doing incredible work, knowing that their measurements are accurate, repeatable, and easy to make.

References:

Where we come from

Park Systems has long been an innovative force in emerging nanoscale microscopy and metrology solutions. CEO and founder Dr. Sang-il Park was part of the original Stanford University team that developed AFM technology in the early 1980s and paved the way for the systems available today. As AFM technology progressed, Park began to recognize the potential of AFM technology in a wide range of fields. In 1997, he brought this new capability to commercial applications, initially focusing on the semiconductor and research markets. He founded Park Scientific Instruments, the world’s first commercial AFM company, and was later joined by industry pioneer Prof. C.F. Quate.

In December 2015, Park Systems held its IPO, joining the KOSDAQ Composite Index. We hold several unique distinctions such as being the first company listed on the KOSDAQ to receive multiple “AA” ratings on technical evaluations of our technologies. We are also proud to currently be the only Atomic Force Microscopy manufacturer to have gone public. All other manufacturers have stayed private or became part of public companies via mergers and acquisitions.

References:
Innovative technology

Our comprehensive line of AFMs offers users unparalleled accuracy and ease of use. With AFMs designed specifically to be used in materials science, electronics, life science, nanotechnology, and other areas of research and industry, our tools are trusted to deliver ultra-high resolution with extremely precise measurements quickly and easily.

The world's only true Non-Contact AFM

Park AFMs are the only ones to feature True Non-Contact™ mode, allowing users to both take repeated measurements while preserving tip sharpness and not damage the sample surface. This provides better, more accurate scans and reduces required maintenance.

Superior Architecture

Park AFMs feature decoupled XY and Z architecture, flexure-guidance, and fast Z scanner movements. This allows for flat scans free from distortion as well as non-contact technology, a dynamically controlled Z stage for advanced force-distance spectroscopy, and the world’s only rotatable head for 3D metrology.

Higher linearity for more accurate scans

Many factors can compromise scanner accuracy like creep, hysteresis, temperature dependence, and aging. That’s why all of our XY scanners are controlled by a closed-loop circuit, which detects the real position of the scanner and corrects any nonlinear behavior, giving an integral linearity of less than 0.5%.

Separate XY and Z scanners with no background curvature to control out-of-plane motion

Park AFMs feature separated XY and Z scanner structure, with no background curvature to reduce out-of-plane motion to less than 2 nm per 100 µm of movement.

Better responsiveness so you can see more

Our XY scanners all have independent driving axes for each direction giving better responsiveness than piezoelectric tube scanners so you can see every detail.

1, 2, 3 Click Imaging with Park SmartScan

In an industry dominated by complicated and poorly designed user interfaces, Park Systems prides itself on creating systems that are both powerful and surprisingly easy to use. Our Park SmartScan Q6 was designed to be highly effective by automating many of the processes that researchers and engineers perform every day. This can drastically improve efficiency in lab and industrial settings and allow more senior technicians to offload some of their work to less experienced users.

Park SmartScan automates and guides the user through every step of the imaging process. All the user needs to do is place the sample on the stage, choose the area of interest, and specify the scan size desired. The rest is done by the software at a click of a button.

The system will automatically do the frequency sweep for the cantilever, move the Z stage to the sample, and auto-focus on the sample allowing the user to see and navigate the area of interest for imaging. It will also adjust all the necessary parameters for optimum settings, engage the cantilever, and start scanning the sample. The scan will continue with no additional input from the user until the image is acquired and completed.

Powerful Integrated Software Tools

Park Systems is constantly working to make our tools more powerful and useful to users in research and industry. Our new integrated software tools will allow for significant advancements in accuracy and efficiency in nanoscale spectroscopy and metrology.

Below is a partial list of innovations we’ve developed:

- PinPoint Nanomechanical
- QuickStep SCM
- One pass EFM
- Recipe based automated scanning
- Automatic Defect Review
- 3D Scanning
- Scanning ion conductance microscopy with AFM
Our products and solutions

Park Systems creates the world’s most accurate line of nanoscale microscopy and metrology tools for research and industrial applications. Our innovative features, such as True-Non Contact™ mode and cutting-edge automation, set our products apart from the competition and make Park Systems AFMs the easiest to use and most advanced AFMs available.

General AFMs

Park Systems provides a range of popular AFMs for general research and industrial applications. Designed to be extremely versatile while still providing the accuracy and functionality necessary to do high quality work, our line of general AFMs offer researchers and engineers alike the ability to get extremely accurate results quickly and easily.

Applications:
- Biological Science
- Materials Science
- Failure Analysis
- Semiconductor Analysis
- Hard Disk Media Analysis

Small sample AFM

Park XE7
True research-grade AFM for the practical budget

Park NX10
The world’s most accurate easy-to-use research AFM

Park NX10 SICM
Cutting-edge nanoscale imaging in aqueous environments

Large sample AFM

Park XE15
Capable, adaptable, and affordable—the best value large sample AFM

Park NX20
Power, versatility, ease of use, brilliantly combined for large sample AFM

Park NX20 300mm
The leading automated nanometrology tool for 300 mm wafer measurement and analysis

Industrial AFMs

Park Systems is dedicated not just to advancing research, but industry as well. That’s why our designers have worked to build a line of the most effective AFMs for FA engineers and industrial applications. Allowing users to take highly accurate measurements and complete their work more quickly, these tools can improve efficiency in the workplace and reduce errors, leading to a more profitable, more consistent development and production process.

Applications:
- Failure Analysis
- Semiconductor Analysis
- Hard Disk Media Analysis

Biology and Chemical

Biological research is one of the fastest growing fields of the 20th century. Park AFMs have played critical roles in this sector, giving researchers the tools they need to develop novel insights into the vast and complicated processes and structures of biology.

Park NX12
The most versatile AFM for analytical and electrochemistry

Park NX-HDM
The most innovative AFM for automated defect review and surface roughness measurement

Park NX-Wafer
Low noise, high throughput atomic force profiler with automatic defect review

Park NX-PTR
Fully automated AFM for accurate inline metrology of hard disk head sliders

Park NX-3DM
Innovation and efficiency for 3D metrology
At Park Systems, we understand that in today’s highly competitive world, researchers can’t afford to worry about the precision of their instruments. That’s why we developed the Park NX10, the world’s most accurate and easy-to-use AFM.

High accuracy for nanoscale research

- Independent Z scanner and low noise Z detector for better readings
- XY stage flexure base to eliminate the bowing effect found in other AFMs
- The world’s only true non-contact AFM to keep tips accurate longer
- Accurate imaging, user friendly interface, automatic tip approach and 10 times rapid scan setting

General and industrial researchers as well as FA engineers are all expected to deliver results. There’s no room for error in the data provided by their instruments. That’s why the Park NX20, with its reputation as the world’s most accurate large sample AFM, is rated highly by researchers and FA professionals around the world.

Accurate large sample AFM solution for research and FA laboratories

- Surface roughness measurements for media and substrates
- Defect review imaging and analysis
- High resolution electrical scan mode
- Sidewall measurements for 3D structure study
- Accurate AFM topography with low noise Z detector
The Park XE7 is one of the most affordable research grade AFMs available, both in terms of initial price and total cost of ownership. That makes it perfect for departments that need a powerful research AFM or teaching tool, but are on a tight budget. It features Park’s True Non-Contact™ mode, so you can save money on probe tips. It’s also built to last and highly upgradeable, so you’ll be able to use it in your lab much longer than many competing AFMs.

High accuracy and performance for budget minded research

- Crosstalk Elimination gives more accurate XY scans
- Accurate height measurements without software processing
- The largest number of sample measurement options
- Comprehensive range of SPM modes
- The best selection of options and upgrades in the industry

### Park NX-Hivac

**The most advanced high vacuum AFM for failure analysis and sensitive materials research**

The Park NX-Hivac is a cutting-edge high vacuum AFM designed to provide accurate performance for failure analysis on highly doped semiconductors. Using Park’s signature technology, the Park NX-Hivac is a true high vacuum AFM that can provide high resolution, low noise measurements that are repeatable and easy to acquire. This makes it the perfect choice for labs looking to increase their throughput and accuracy.

**High vacuum scanning for failure analysis applications**

- Advanced Steplift automation and laser alignment for faster scanning
- Multi-sample chuck
- Easy tip exchange with signature Park technology
- Large 300 mm x 420 mm x 320 mm vacuum chamber
- On-axis optics with ultra-long viewing distance
- High Vacuum SPM for improved sensitivity

**SPECIFICATION**

**Scanner**

- XY scanner: 50 µm x 50 µm (100 µm x 100 µm optional)
- Z scanner: 15 µm

**Optics**

- Objective lens: 10 x
- SM pixel CCD

**Physical Information**

- Vacuum chamber (base): 100 mm x 420 mm x 320 mm
- Vacuum chamber (outer including granite & pumps): 305 mm x 505 mm x 120 mm

**Sample Stages**

- XY stage travel: 22 mm x 22 mm
- Sample size: 50 mm x 50 mm, up to 20 mm thickness

**Software**

- SmartView: Park AFM operating software
- NAV: FNAM data analysis software
- Hivac Manager: Autovac vacuum control software

**Electronics**

- 16 channels
- 2 high-speed ADC channels (50 MSPS)
- 2 high-speed DACs for X, Y, and Z position
- 1 electromechanical drive controller
- 3 channels of integrated Basler camera

**High Vacuum**

- 12 channels
- 2 high-speed DAC channels (50 MSPS)
- 2 high-speed ADCs for X, Y, and Z position
- 3 channels of integrated Basler camera
- 3 channels of integrated Basler camera

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**Electronics**

- High performance 512F 400 kHz with 6000 HPI
- ADC: 24-bit channel of 14 bits A/D at 100 kHz sampling
- DAC: 24-bit channel of 18 bits DAC at 100 kHz sampling

**Sample Stages**

- XY stage travel: 23 mm x 23 mm
- Z stage travel: 23 mm
- Force steps travel: 75 µm
- Sample size: up to 100 mm x 100 mm, up to 20 mm thickness
Park XE15
Capable, adaptable, and affordable-the best value large sample AFM

The Park XE15 includes many unique capabilities that make it ideal for labs and research centers that process a large volume and need an AFM that can handle a diverse range of samples. Its reasonable price and robust set of features also make it one of the best value AFMs available.

Versatility and power for nanoscale research and FA
- Unique multi sample scan reduces downtime
- Large 200 mm x 200 mm sample size increases possibilities
- Our most inclusive set of scan modes for adaptability to any need
- Perfect for shared labs and user facilities

The Park XE15 includes many unique capabilities that make it ideal for labs and research centers that process a large volume and need an AFM that can handle a diverse range of samples. Its reasonable price and robust set of features also make it one of the best value AFMs available.

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- Our most inclusive set of scan modes for adaptability to any need
- Perfect for shared labs and user facilities

Park NX20 300 mm
The Atomic Force Microscope of Choice for Failure Analysis, Quality Assurance and Quality Control

The Park NX20 300mm is the industry’s first large sample AFM that supports a fully motorized traveling range of 300 mm x 300 mm.

Designed for failure analysis and quality control laboratories, the Park NX20 300mm can inspect an entire 300 mm wafer efficiently, without any need for cumbersome sample displacement.

Proven AFM performance and Single Click AFM automation eliminates any need for sample parameter adjustments and makes the Park NX20 scanning process as efficient and user-friendly as possible.

With our SmartScan™ measurement interface, users can easily implement reliable and repeatable sequential multiple-site measurements over the entire 300 mm x 300 mm area.

This makes the NX20 300mm the premiere choice for FA, QA, and QC engineers that need to scan large samples.

Flexible 300 mm Sample Chuck
Park NX12
The most versatile AFM platform for your nanoscale microscopy needs

Park NX10 SICM
Cutting-edge nanoscale imaging in aqueous environments

Park NX10 Scanning Ion Conductance Microscope (SICM) allows researchers to acquire accurate measurements of samples in aqueous environments. Electrochemistry studies using SICM can now pair their investigations of reaction mechanisms related to redox chemistry and other phenomena with the ability to map their sample's topography. Correlating these sets of data has huge implications for applications such as next-generation battery development where SICM can measure a battery's performance versus its degradation at the nanoscale. Park NX10 SICM can also be of considerable benefit for work in cell biology. Unlike in AFM, SICM applies no force to samples meaning cell biologists can study living cells without disturbing them, opening new doors of inquiry into how these units of life work. Park NX10 SICM Module can also be purchased as an option to your existing Park NX10 AFM allowing for an easy transition between the two techniques, creating an even more comprehensive tool for specimen analysis.

High-precision non-invasive nanoscale imaging tool based on SICM & AFM
• Non-invasive morphology imaging in liquids for greater project sample integrity
• Nanometer resolution positioning of nano/micropipette and pipette/probe-sample distance control in nanoscale gives the ability to make finer adjustments
• Current-distance spectroscopy and mapping allows researchers to take more accurate readings
• Our open platform allows for easy integration with other systems so users can expand their capabilities

Park NX10 SICM provides nanoscale imaging for a wide range of applications:
1. Analytical Chemistry
   Electrochemical reaction imaging by integration of scanning electrochemical microscopy
2. Electrophysiology
   Ion channel detection together with patch clamping
3. Neuroscience
   High resolution imaging of single neuron integrated with patch clamping
4. Cell Biology
   Cell morphology imaging, nano biopsy and injection

Our dedicated auto-imaging software makes scanning easier and more accurate:
1. Automation for easier scanning
   Streamline research and increase productivity with ARS (approach-retract-scan) free from parameter control, so you have less to worry about while scanning.
2. Steady pipette-probe-sample distance control in nanoscale
   By automatically refreshing its reference value before approaching each pixel, the stopping height of the pipette near the sample surface is not influenced by set-point drift.

The perfect platform for Fundamental Electrochemistry
Researchers can utilize the NX12 platform for various electrochemical applications:
- Scanning Electrochemical Microscopy (SECM)
- Scanning Electrochemical Cell Microscopy (SECCM)
- Electrochemical Atomic Force Microscopy (EC-AFM)
- Electrochemical Scanning Tunneling Microscopy (EC-STM)

PinPoint™ mode
<table>
<thead>
<tr>
<th>Height (PinPoint)</th>
<th>Adhesion</th>
<th>Modulus</th>
<th>Stiffness</th>
</tr>
</thead>
</table>

Park NX10 SICM Module
The integration of the SICM into Park NX10 platform allows researchers to expand the depth of their research and easily perform nanoscale imaging in aqueous environments.
Identifying nanoscale defects is a very time-consuming process for engineers working with media and flat substrates. Park NX-HDM is an atomic force microscopy system that speeds up the defect review process by an order of magnitude through automated defect identification, scanning, and analysis. Park NX-HDM links directly with a wide range of optical inspection tools, thus significantly increasing the automatic defect review throughput. With its industry’s lowest noise floor, and its unique True Non-Contact™ technology, the NX-HDM is the most accurate AFM for surface roughness measurement.

**Powerful automated AFM for industry**
- Higher throughput with advanced automation technology
- Automatic defect identification, scanning, and analysis
- Sub-angstrom surface roughness measurement
- Industry leading low noise floor

**Automatic Transfer and Alignment of Defect Maps to AFM**
Utilizing an advanced proprietary mapping algorithm, the defect map obtained from automated optical inspection (AOI) tool is accurately transferred and mapped onto Park NX-HDM. This technology allows full automation for high throughput defect imaging.

**Automated Search Scan & Zoom-in Scan**
Optimized scan parameters enable a fast two step scan: (1) a quick, low resolution search scan to locate the defect, then (2) a high resolution zoom-in scan to obtain defect details. The scan size and scan speed parameters are adjustable to match the user’s needs.

**Spec Sheet**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Optical Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>XY scanner</td>
<td>100 µm x 100 µm</td>
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<tr>
<td>Z scanner</td>
<td>25 µm</td>
</tr>
<tr>
<td>XY scan rate</td>
<td>5 μm/s</td>
</tr>
<tr>
<td>XY stage size</td>
<td>100 µm x 100 µm</td>
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<tr>
<td>XY stage travel</td>
<td>100 µm x 100 µm</td>
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<tr>
<td>Working range of XY stage</td>
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<tr>
<td>Sample size</td>
<td>50 mm x 50 mm, 10 mm thick, and up to 100 g</td>
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<tr>
<td>Performance</td>
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<td>XY scan rate</td>
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**Features**
- Higher throughput with advanced automation technology
- Automatic defect identification, scanning, and analysis
- Sub-angstrom surface roughness measurement
- Industry leading low noise floor

**Applications**
- Nanoscale biology
- Materials science
- Microelectronics
- Biomedical research

**Rat Brain Tissue**
Courtesy of Prof. Ushiki (Niigata University).
Park NX-Wafer
Low noise, high throughput atomic force profiler with automatic defect review

The Park NX-Wafer is the only wafer fabrication AFM with automatic defect review. This gives it the power to increase the throughput of your lab by up to 1000% while ensuring a high level of accuracy and quality control when scanning wafers up to 300 mm in size.

Accurate, high-throughput atomic force profiling

- Fully automated AFM solution for defect imaging and analysis
- Capable of scanning 300 mm wafers
- Can improve defect review productivity by up to 1000%
- Low noise atomic force profiler for more accurate CMP profile measurements
- Sub-angstrom surface roughness measurements
- Minimal tip-to-tip variation

Automated Search & Zoom-in Scan

The defects are imaged in two steps: (1) a survey imaging, either by AFM or enhanced optical vision, to refine the defect location, then (2) a zoom-in AFM scan to obtain a detailed image of the defect, presenting automatic analysis of the defect type and the subsequent defect dimensions.

Automated Transfer and Alignment of Defect Maps with Enhanced Vision

By utilizing Park’s proprietary coordinate translation technique, the new Park ADR AFM can automatically transfer the defect maps obtained from a laser-scanning defect inspection tool to a 300 mm Park AFM system. This technology does not require any separate step to calibrate the stages of the targeted defect inspection system and allows full automation for high throughput defect imaging.

Powerful features for high throughput inline PTR measurements

- Be more productive with Fully Automated AFM for Inline Hard Disk Slider Metrology
- Accurate and Repeatable Measurements for Improved Production Yield
- Accurate Height Measurements with Low Noise Z Detector
- Best Tip Life and Scan Resolution by True Non-Contact™ Mode

Park NX-PTR
Fully Automated AFM for Accurate Inline Metrology of Hard Disk Head Sliders

The Park NX-PTR is a fully automatic industrial in-line AFM solution for, but not limited to, automatic Pole Tip Recession measurements on Rowbar-level, individual Slider-level, and HGA-level sliders. With sub-nano scale accuracy, repeatability, and throughput, the Park NX-PTR is the metrology tool of choice for Slider manufacturers to improve their overall production yield.

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Automatic PRT Measurement and Analysis

Pole Tip Recession measurements are fully automated with the Park-NX system, giving you higher throughput capability, both at the center, noseback, and slider level.

Automatic Wall Angle Measurement & Analysis

Automatically get measurement and analysis of the various wall angle applications.

Automatic Defect Measurement and Analysis

Measurement and analysis of various defects such as edge spines are fully automated.

SPECIFICATION

Scanner

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<td>Z scanner</td>
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<td>Topography noise</td>
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Sample Stages

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<th>Stage Type</th>
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<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>XY stage travel</td>
<td>100 µm x 100 µm x 100 mm</td>
</tr>
<tr>
<td>Z stage travel</td>
<td>15 µm</td>
</tr>
</tbody>
</table>

Physical Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Emissivity</td>
<td>600 V (6 x 600 V)</td>
</tr>
<tr>
<td>Contact Potential</td>
<td>600 V (6 x 600 V)</td>
</tr>
</tbody>
</table>

Electrode Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>XY scanner</td>
<td>100 µm x 100 µm</td>
</tr>
<tr>
<td>Z scanner</td>
<td>15 µm</td>
</tr>
<tr>
<td>Topography noise</td>
<td>1.845 nm</td>
</tr>
</tbody>
</table>
Park NX-3DM
Innovation and efficiency for 3D metrology

Park Systems has introduced the revolutionary Park 3DM Series, the completely automated AFM system designed for overhang profiles, high-resolution sidewall imaging, and critical angle measurements. With the decoupled XY and Z scanning system with tilted Z-scanner, it overcomes the challenges of the normal and flare tip methods in accurate sidewall analysis. Utilizing our True Non-Contact Mode™, the Park 3DM Series enables non-destructive measurement of soft photoresist surfaces with high aspect ratio tips.

An indispensable tool for fabrication of wafers up to 300 mm in size
- Fully automated industrial AFM using highly accurate Park NX technology
- Capable of scanning 300 mm wafers
- Innovative head design for undercut and overhang structure scanning
- No sample preparation is necessary to obtain accurate sidewall roughness measurements
- True Non-Contact™ mode allows instrument and sample preservation without sacrificing image fidelity

Path for Growth: Options, accessories, and consumables

Park AFMs are designed for modularity, making them highly versatile for a wide range of research and industry environments. From our low-noise acoustic enclosures, to our array of scanners, heads, and accessories, Park Systems creates some of the most advanced and most customizable nanometry and imaging tools available. Customers can tailor AFMs to their unique needs by outfitting them with our diverse range of accessories and options.

Our Options & Accessories:

Park NX10 SICM Module
Park’s Scanning Ion Conductance Microscope (SICM) module is offered as an add-on accessory for the Park NX10 AFM providing biology researchers with the ability to take accurate measurements of samples in aqueous environments. Unlike with AFM technology, this device applies no force to samples so researchers can study live cell membranes without disturbing them, opening new doors into biological research.

Z Scanner Heads
Park Systems has developed a range of Z scanner heads that help to make Park AFMs the world’s most accurate. Our current lineup of heads includes:

- **Standard NX AFM Head**: The standard NX AFM head has a high speed Z scanner with 15 µm scan range. It is our default head for all of the NX series AFMs.
- **Long Travel NX AFM Head**: The long travel NX AFM head gives extended Z scan range capability to the NX series of AFMs.
- **25 µm XE Head**: Give your XE series AFM an extended scanning range with this head featuring a 25 µm Z scanner. This head is perfect for high aspect ratio samples such as optical lenses and MEMS devices. The head is fully compatible with all basic and advanced modes and options.

**SPECIFICATION**

<table>
<thead>
<tr>
<th>Z scanner</th>
<th>5 µm (0.020&quot;), 50 µm (0.197&quot;) (800 nm system)</th>
<th>50 µm (0.197&quot;) (800 nm system)</th>
<th>50 µm (0.197&quot;) (800 nm system)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XY scanner</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
</tr>
<tr>
<td>Z scanner</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
<td>100 µm (0.394&quot;) (400 mm system)</td>
</tr>
<tr>
<td>Topography scan range</td>
<td>25 µm (0.001&quot;) (200 mm system)</td>
<td>25 µm (0.001&quot;) (200 mm system)</td>
<td>25 µm (0.001&quot;) (200 mm system)</td>
</tr>
</tbody>
</table>
Acoustic Enclosures

AFMs measure properties at the nanometer scale, so every small factor can have a large effect on accuracy. That’s why Park has developed some of the best acoustic enclosures on the market, isolating the instrument from noise and helping to make Park AFMs the world’s most accurate.

**Acoustic Enclosure 101**
Our easiest to handle enclosure, the Acoustic Enclosure 101, weighs just 40 kg, while still effectively isolating your AFM from unwanted noise.

**Acoustic Enclosure 202**
The standard enclosure for Park XE7 and Park NX10, the Acoustic Enclosure 202, offers high precision scanning and stable imaging conditions with no background curvature, giving you more accurate data.

**Acoustic Enclosure 203**
The Acoustic Enclosure 203 is designed for use with the Park NX10, with an ergonomic design that makes it one of the most effective and easy to use acoustic enclosures on the market. Thermal drift can be further mitigated through a temperature stabilization option that can be integrated with this unit.

**Acoustic Enclosure 301**
Designed exclusively for the Park NX-Bio, this acoustic enclosure isolates the system from acoustic and light noise for better accuracy. The included active vibration isolation table further increases vibration isolation performance. A temperature stabilization option is also available to minimize thermal drift, making the unit even more effective.

Environmental Control

Our selection of liquid cells provides an extensive array of options for biological researchers that need to measure samples immersed in a controlled liquid environment.

**EnviroChamber**
Our environmental chamber provides a controlled atmosphere for samples sensitive to oxygen and water vapor. The atmosphere of the chamber is carefully controlled for humidity and oxygen concentration.

Liquid Cells

Our selection of liquid cells provides an extensive array of options for biological researchers that need to measure samples immersed in a controlled liquid environment.

**Universal Liquid Cell**
Our universal liquid cell is the most flexible and powerful option for biological researchers. The cell can be used as an open or closed liquid cell while constantly controlling for temperature. The cell features three outlets for liquid, gas, and/or reference and counter electrodes.

**Electrochemistry Cell**
This cell is ideal for researchers who need to take electrochemical measurements. It features corrosion resistant PCTFE construction so that it can hold up under heavy use.

**Open Liquid Cell**
Our open liquid cell is the ideal choice for those conducting research in an open environment.

XY Scanners

Park XY scanners offer a wide range of features that make them extremely accurate and easy to use:

**10 µm x 10 µm XY Scanner**
For the highest resolution AFM/STM imaging, choose the 10 µm XY scanner.

**50 µm x 50 µm XY Scanner**
The standard scanner for Park XE7 and Park NX10, the 50 µm XY scanner offers high precision scanning and stable imaging conditions with no background curvature, giving you more accurate data.

**100 µm x 100 µm XY Scanner**
The 100 µm XY scanner provides a larger, but still extremely precise measurable area.

Environmental Control

Our selection of liquid cells provides an extensive array of options for biological researchers that need to measure samples immersed in a controlled liquid environment.

**EnviroChamber**
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**Open Liquid Cell**
Our open liquid cell is the ideal choice for those conducting research in an open environment.
Accessories

To make sure you can conduct more varied and specific research and tests, Park offers an array of additional accessories to further customize your AFM.

Active Q Control
During non-contact and tapping imaging, the kinetic energy of the cantilever is decreased, especially in liquid. This reduces accuracy and resolution. Active Q Control combats this by actively compensating the energy loss, enhancing the quality of your topographic data.

Easy Snap by Hand
The unique head design allows easy side access allowing you to easily snap new tips and samples into place by hand. The cantilever is ready for scanning without the need for any tricky laser beam alignment by using pre-aligned cantilevers onto the cantilever tip holder.

Easy Tip and Sample Exchange
The unique head design allows easy side access allowing you to easily snap new tips and samples into place by hand. The cantilever is ready for scanning without the need for any tricky laser beam alignment by using pre-aligned cantilevers onto the cantilever tip holder.

Signal Access Module
Access all the input/output signals for your AFM with the Signal Access Module. The unit provides an easy way to get scanner position, cantilever deflection, driving signal, bias, and other data to use to improve the quality of your work.

Vacuum Chuck
Our vacuum chuck is the most secure option for loading samples. The standard chucks can hold 2-inch, 4-inch, and 6-inch wafers but we can also create a custom chuck for different wafer sizes.

Non-magnetic Sample Holder
Ideal for taking delicate MFM measurements. Usage of the non-magnetic sample holder prevents interference experienced from the magnetic field produced by the standard sample holder.

Magnetic Field Generator
The magnetic field generator lets you apply an external magnetic field to the sample. The field can be changed from -300 gauss to 300 gauss, and is parallel to the sample surface. You can then easily observe changes in the magnetic structure using one of our magnetic force microscopy (MFM) options.

External High Voltage Kit
This accessory provides an applied external bias of up to 2 kV.

Chip Carriers
Our chip carriers come in several types depending on your needs. We currently offer standard chip carriers, clip-type chip carriers, ceramic chip carriers, Teflon-backed chip carriers for Conductive AFM, and more.

Vacuum Chuck
Our vacuum chuck is the most secure option for loading samples. The standard chucks can hold 2-inch, 4-inch, and 6-inch wafers but we can also create a custom chuck for different wafer sizes.

Non-magnetic Sample Holder
Ideal for taking delicate MFM measurements. Usage of the non-magnetic sample holder prevents interference experienced from the magnetic field produced by the standard sample holder.

Best technical support in the industry

As the only publicly traded company that specializes solely on AFM and SPM technology, we have cultivated a global network of highly-trained service engineers with expertise in the AFM products you rely on to complete your work. With Park Systems you can be assured, around-the-clock, that even your most complex technical questions will rapidly receive solid answers from actual AFM experts each and every time. We aim to develop a long-term support relationship with you and your nanoscale work and commit to providing nothing less than the best service possible.

9 to 9 Live Support
Sometimes problems can’t wait, and you need expert help immediately. That’s why Park offers 9 a.m. to 9 p.m. live support on our website, giving customers access to the resources and professional assistance they need to fix their problems fast.

Customer Support Forum

Leverage the crowdsourced knowledge found in our customers-only technical forum. The online message board is frequented by leading experts on Park technology and regularly reviewed by Park staff for hard to answer questions. Visit www.parkafm.com/support

Park Analytical Services

Park Systems offers cutting-edge AFM technology on an as-needed basis in the North American market. This allows those that don’t have a budget to purchase an AFM to establish AFM protocols and have samples analyzed using the world’s most accurate AFMs. This brings the high precision equipment and unmatched expertise of Park Systems to more researchers, engineers, and innovators than ever before.