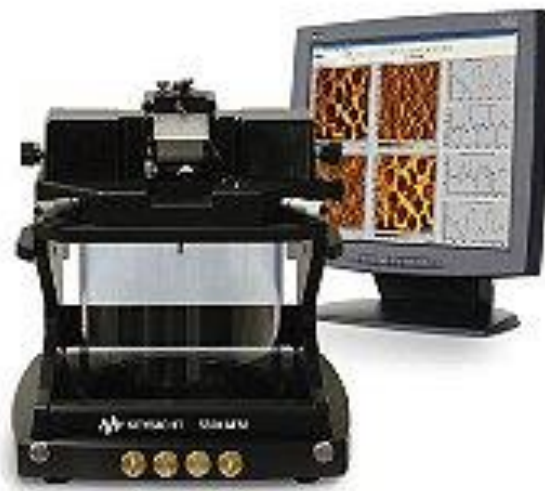


AFM/STM catalog

Agilent AFM/STM systems

Agilent 5500 AFM

Agilent 5500 STM



Agilent AFM/STM Instruments



5500 AFM/STM System (N9410S)

The Agilent 5500 is a powerful multiple-user research system for AFM/SPM. In addition to atomic-scale resolution, true modularity enables you to add capability-enhancing options as the need arises. The system's intelligent design permits the simple integration of numerous imaging modes and easy-to-use, application-specific sample-handling plates. Our balanced-pendulum, top-down multipurpose scanners come in a range of sizes, all offering outstanding linearity and accuracy.



Multipurpose Scanners N9521A, 9520A 9524A

Agilent's multipurpose scanners deliver unsurpassed performance, versatility, and ease of use for atomic force microscopy. They are ideal for imaging in fluid or air and under controlled temperature and environmental conditions. Our multipurpose scanners are available in two scan ranges: a large scanner that can scan areas up to 90 μm x 90 μm and a small scanner that offers atomic resolution up to 9 μm x 9 μm . Open-loop scanners, Z closed-loop scanners, and XYZ closed-loop scanners are available.



STM 1 micron Scanner N9501A

For the ultimate in high-resolution imaging performance, Keysight's STM 1 μm scanner offers the precision of a single-micron scan range. It provides stable imaging at pico-ampere and sub-pico-ampere currents to resolve individual atoms and molecules.



AFM/LFM Detector (N9702A)

Designed specifically for use with Keysight multipurpose scanners, this detector accurately records the bending of the AFM/LFM system's cantilever so as to render images of a sample's surface properties with superb resolution and fidelity.



Pre-Amp Modules (N9555A,B,C,D for 0.1, 1, 10, 100nA/V)

These pre-amplifier modules for the 7500 and 9500 metrology scanner are used to provide electrical conductance for CSAFM imaging and the STM nose cone.



Standard AFM Nose cone N9533A

Standard nose cone is used to perform contact mode AFM/SPM and LFM, multipurpose scanners, it holds the probe at 9° from horizontal. This nose cone is made from PEEK polymer.



AAC Nose Cone (N9534A 9 degree)

This nose cone performs acoustic AC mode (AAC mode) AFM/SPM. Compatible with multipurpose scanners, it is a 9° nose cone made from PEEK polymer.



AAC Nose Cone (N9534B 12 degree)

This nose cone performs acoustic AC mode (AAC mode) AFM/SPM. Compatible with multipurpose scanners, it is a 12° nose cone made from PEEK polymer.



CS-AFM Nose Cone N9541,9541,9532A

CS-AFM nose cones have been designed for use with our multipurpose scanners to enable current-sensing atomic force microscopy. For optimal application performance, three CS-AFM/SPM nose cones are offered: 0.1 nA/V, 1 nA/V, and 10 nA/V.



Top MAC Nose Cone(N9536A)

These nose cones are used to perform Top MAC Mode imaging with our multipurpose scanners. A 9° nose cone is offered for Top MAC Mode measurements in air; an 8° nose cone is offered for Top MAC Mode measurements in fluid. Both nose cones are made from PEEK polymer.



STM Nose Cone(N9530, 9531, 9532A)

STM nose cones have been designed for use with our multipurpose scanners to enable scanning tunneling microscopy. For optimal application performance, three STM nose cones are offered: 0.1 nA/V, 1 nA/V, and 10 nA/V.



Pico Plus Controller N9610A

The controller design includes a modular structure that allows simplified maintenance as well as streamlined future upgrades of the controller electronics via plug-in board modules. The 5100 AFM/SPM standard controller provides:

- Five 24-bit scan drives for high resolution and accuracy
- Two 24-bit output channels for controlling imaging parameters
- Five 16-bit input channels for data acquisition
- Two 32-bit DSPs for scan & data
- Built-in USB link for fast and reliable data transfer
- Modular structure for easy addition of new capabilities.



Nose Cone Removal Tool

This specialized tool enables the easy removal of interchangeable nose cone assemblies from our multipurpose scanners, facilitating quick and convenient switching between AFM imaging modes.



Pico IC Noise and Vibration Isolation Chamber.

Table-top noise and vibration isolation chamber (Pico IC) isolates the atomic force microscope from vibration, air turbulence, and acoustic noise, all of which adversely affect imaging. This chamber provides acoustic isolation for the instrument by utilizing multiple layers of sound-damping materials. The vibration isolation system damps incoming vibrations via the use of stiff compliant bungees and a suspended heavy granite block. It also helps control temperature variability to an extent. The chamber is designed to be accessed from either the left or right side, as both the door and cable ports are reversible. It is compact, easy to use, and permits atomic-resolution imaging in noisy environments.



Minus K Spring Load vibration Isolation Station

The new benchtop platform offers 10-100 times better performance than air tables in a package only 4.6 inches tall, no air needed for operation.



AAC III Controller with tripple lock-in

The Acoustic AC (AAC) Mode controller is designed so that the movement of cantilever holder is at or near its resonant frequency , typically 100 to 400 kHz. Interaction between the probe and the sample reduces the oscillation amplitude. Built in Q-control and three user-configurable lock-in amplifiers afford accuracy and faster time to results. Two expansion slots are also provided. A wider operating frequency range (up to 6 MHz) enables higher harmonic imaging, yielding images with contrast beyond that seen using fundamental amplitude and phase signals. It allows single-pass KFM/EFM simultaneously imaging topography, amplitude, and surface potential.



MAC III Controller

The patented Magnetic AC (MAC) Mode controller is designed so that the movement of cantilever holder is at or near its resonant frequency , typically 100 to 400 kHz. Interaction between the probe and the sample reduces the oscillation amplitude. Built in Q-control and three user-configurable lock-in amplifiers afford accuracy and faster time to results. Two expansion slots are also provided. A wider operating frequency range (up to 6 MHz) enables higher harmonic imaging, yielding images with contrast beyond that seen using fundamental amplitude and phase signals. It allows single-pass KFM/EFM simultaneously imaging topography, amplitude, and surface potential. An high current amplifier out put enables this unit to drive the patent magnetic AC mode current sample stage or top MAC cantilever nose cone. MAC mode is an patent technology allows better imaging resolution in liquid.



AAC Mode Controller

Acoustic AC mode controller is designed so that the movement of cantilever holder is at or near its resonant frequency , typically 100 to 400 kHz. Interaction between the probe and the sample reduces the oscillation amplitude. The controller has one single channel lock-in amplifier with operation frequency range is 200Hz to 1MHz. Signal access available at the back panel for custom experiments.



MAC Mode Controller

Magnetic AC mode controller is designed so that the movement of cantilever holder is at or near its resonant frequency , typically 100 to 400 kHz. Interaction between the probe and the sample reduces the oscillation amplitude. The controller has one single channel lock-in amplifier with operation frequency range is 200Hz to 1MHz. Higher current amplifier allows a MAC sample stage to drive a MAC mode cantilevers for better liquid imaging performance.

Aux Signal Access Breakout Box N9454A



Signal access box that enables single access to high and low voltage signals, built for custom experiments.



Optical Microscope with CCS Camera for 5500 N9451A

The open-top design of Keysight multipurpose scanners allows high-resolution video microscopy straight down the optical axis of our 5500 atomic force microscopes. Together with co-axial illumination and a micrometer-driven translation stage, this optical microscope makes it easy to precisely position a tip over a specific scanning area of interest quickly and easily. Variable zoom provides a wide range of field-of-view. Multiple video options are available for high-quality image resolution.



Sliding Adaptor for 5500 N9462A

Precision adaptor stage for Zeiss, Olympus and Nikon Inverted Light Microscopes that hold the 5500 AFM/SPM scanning head for studies on light microscopes.



Bungee Cord Set

Bungee cord set with 4 cords for the Pico IC noise vibration isolation chamber. resolution.



Temperature Controllers N9654A

temperature controller uses a patented thermal insulation and compensation design to deliver precise temperature control from $-30\text{ }^{\circ}\text{C}$ to $250\text{ }^{\circ}\text{C}$, along with the lowest thermal drift available for high-resolution SPM. It is fully compatible with all imaging modes in air, liquid, and controlled environments and allows imaging during temperature changes. The temperature controller's design isolates the sample plate from the rest of the SPM system; an insulated ceramic fixture protects the surrounding apparatus from the effects of heating or cooling, thus providing the most precise, stable temperature control available for SPM.



Current Booster N9656A

This current booster is required for cooling select Keysight sample plates down to temperatures as low as $-30\text{ }^{\circ}\text{C}$.

Agilent AFM instrumentation offered by NanoCue Technology

Agilent AFM instruments are high precision, modular AFM solutions for research, industry, and education. Exceptional worldwide support is provided by experienced application scientists and technical service personnel. Keysight's leading-edge R&D laboratories are dedicated to the timely introduction and optimization of innovative, easy-to-use AFM technologies.

www.nanocuetech.com/AFM

For more information about NanoCue Technology, please contact: 888-644-0389
Email: songxu@nanocuetech.com
Contact: <https://nanocuetech.com/contact-us>