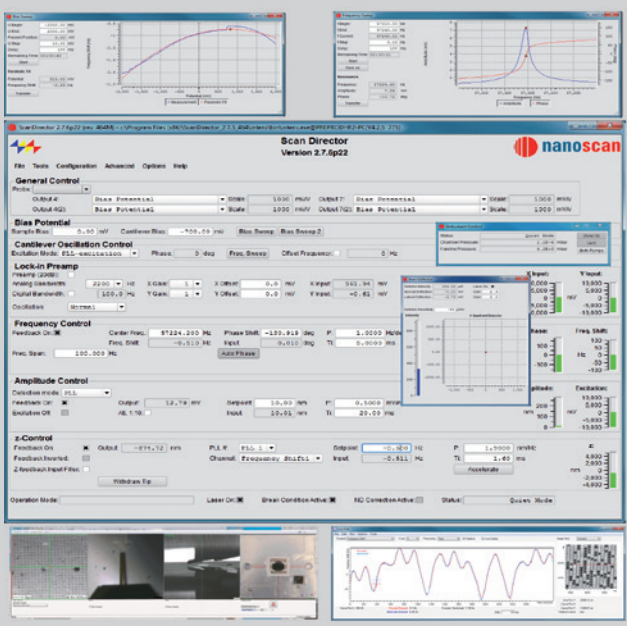




# Complete Solution for SPM Control



## NanoScan SPM Control Software

NanoScan's software splits the control of the Scanning Probe Microscope into a Windows-based user interface and a crash-safe real-time operating system. This concept ensures high flexibility of the software architecture and prioritization of time-critical processes.

# Complete Solution for SPM Control

## ScanDirector

### Detection Schemes

### Feedback Loops

### Navigator

### Scan Types

### Spectroscopy

### Break Conditions

### Data Acquisition & Format

### Oscilloscope

### Instrument Control

## ScanEngine

### Operating System

### Phase-Locked Loops

### Scanner Stage Drive

### User Inputs & Outputs

## Configurable Windows-based user interface

- Cantilever-based, interferometric or 4-quadrant deflection systems
- 2 × Phase-Locked Loops, 2 × amplitude, interferometer and distance controls
- All feedback parameters in physical units
- Remote control of motorized Beam Deflection System and of sample stage assisted by two cameras and Drive-To-Point function
- All standard static and dynamic SPM measurement modes and Multifrequency, Double-Pass, hr-MFM, KPFM, Long-distance Profiling
- 1D and 2D-spectroscopy modes of any scannable channel
- Unique feature to preserve tip sharpness by real-time monitoring of relevant signals and user-defined action sequence
- Unrestricted number of channels and pixels/line
- Top view and Line view with standard image processing
- Open XML format compatible with third-party analysis software
- Internal oscilloscope displaying up to 4 channels
- Vacuum start/vent, Quiet Mode operation, pressure watchdog
- 4 dimmed light controls, 2 temperature sensors

## Robust real-time controller in PXI environment

- LabView Real-Time, interfaced to ScanDirector via Ethernet
- Up to 2 PLLs implemented on FPGAs for fastest processing
- Selectable 20-bit digital or 16-bit analog control
- Up to four 16-bit user-defined inputs (200kSample/s)
- Up to four 16-bit user-defined outputs (1MSample/s)
- Four static 16-bit inputs

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