



- **Highest Performance**
- **Full Automation**
- **Samples up to 150 mm**

DME ProberStation™ 150 With DS 95 SPM Head



Danish Micro Engineering A/S
DME NanoTechnologie GmbH

The Tool for Fast and Reliable SPM Results

DME DualScope™ 95 SPM Scanner Series

With the DualScope™ 95 SPM scanner series we provide the ultimate unification of ease of use and performance! Decade lasting experience in the field of SPM application and manufacturing are united in the DS 95 SPM scanners to help the user achieve the best and most reliable results in the shortest possible period of time.

The **compact design** of the DualScope™ 95 SPM scanner guarantees outstanding stability and scan rates.

The unique **plug and play cantilever exchange** secures fast and safe operation of the instrument.

An **integrated optical axis** in the SPM scanner provides total visual control during approach and positioning.

The DualScope™ 95 SPM scanner provides the facilities for **all common and advanced SPM modes**.

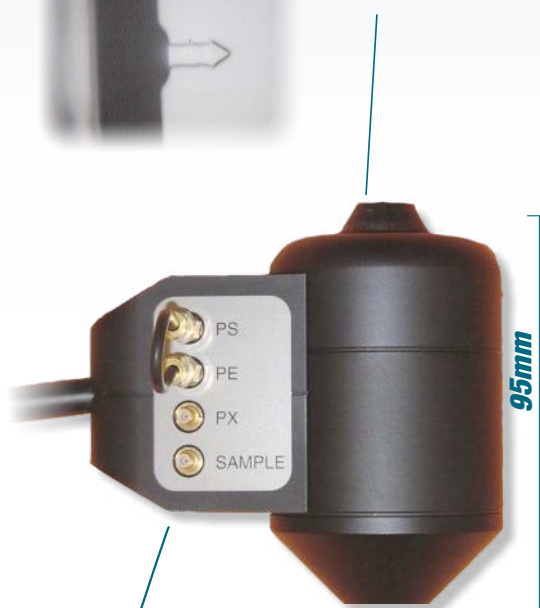
Integrated electronics in the scan head guarantees lowest noise values in electrical SPM modes.

DualScope™ 95 multi mount allows installation of the DualScope™ 95 SPM scanner into DME stages and other facilities like nanoindenters, optical microscopes, etc.

Integrated Optical Axis



Multi Mount for the Installation in DME Stages and Wherever Needed

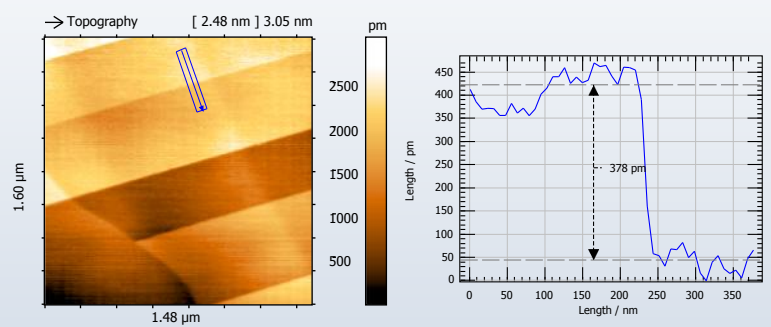


Highest Stability by Compact Design

95mm

On-Side Amplifier Electronics and Contacts

Easy Plug and Play Cantilever Exchange



Superior stability and ease of use: Atomic layers on HOPG in less than 1 minute from switching on the system.

DME DualScope 95 AFM Scanner

Efficiency and Reproducibility In All Measurements On All Samples

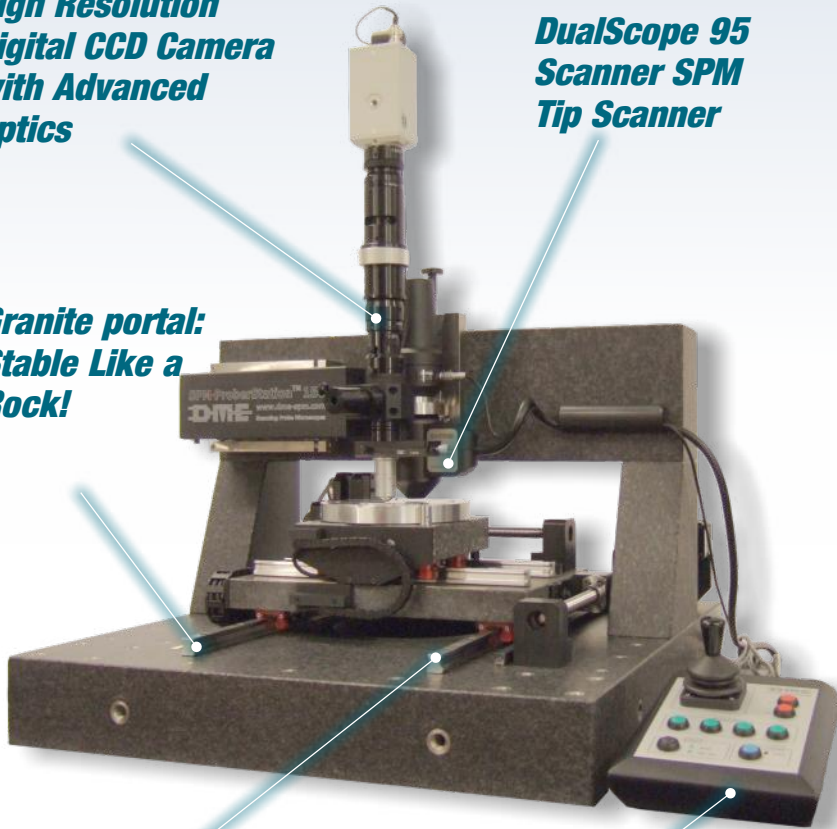
High Resolution Digital CCD Camera with Advanced Optics

DualScope 95 Scanner SPM Tip Scanner

Granite portal: Stable Like a Rock!

Sample Table: Choose from Wide Variety of Motorized XY Translators and Sample Holders

Programmable, Remote Table Controls for Full Automation



The DME ProberStation 150™ is the ultimate stage for SPM on **large samples**. Its long range XY translators allow the investigation of 150 mm samples at all positions and up to 300 mm on specific sample areas.

The fully programmable sample positioning enables **autonomous SPM measurements** on multiple sample positions with **automatic image analysis** and **automatic report generation**.

The combination with high end optics enable an **automated pre-selection of sample sites** for SPM investigation.

Thereby the ProberStation 150™ setup is the **optimal solution for industry** quality maintenance application and R&D environments. The unlimited space for custom or OEM **integration of additional analytic equipment** opens up new horizons for research applications.

Completely Automated Measurement

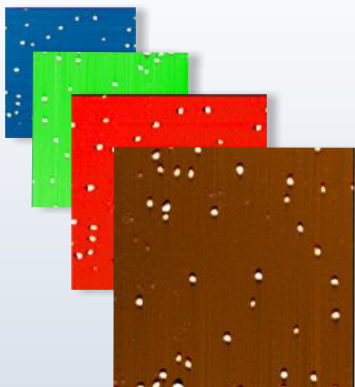


Image Acquisition

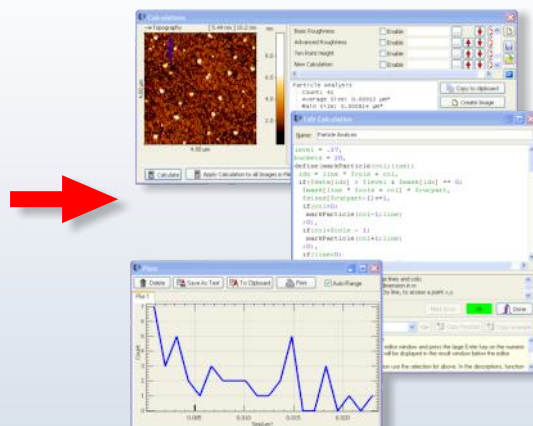
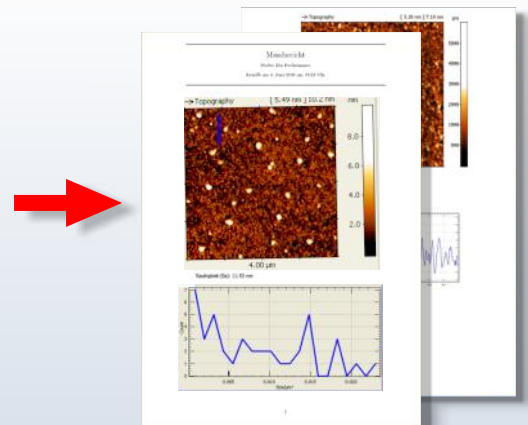


Image Analysis



Report Generation

DME ProberStation™ 150

System Specifications:

System Configuration Possibilities

	Scanner	Stage	Controller	Software
DS95 50 Igloo	DualScope 95 50	Igloo Stage	C26 SPM Controller	ScanTool
DS95 200 Igloo	DualScope 95 200	Igloo Stage	C26 SPM Controller	ScanTool
DS95 50 small granite	DualScope 95 50	Small granite	C26 SPM Controller	ScanTool
DS95 200 small granite	DualScope 95 200	Small granite	C26 SPM Controller	ScanTool
DS95 50 ProberStation	DualScope 95 50	ProberStation	C26 SPM Controller	ScanTool
DS95 200 ProberStation	DualScope 95 200	ProberStation	C26 SPM Controller	ScanTool

Options:

DiProWA digital programmable waveform analyzer

Glueing Tool (cantilever assembly)

Thermo stage

Liquid cell

Motorized xy sample tables with or without optical reference

Additional optical high resolution microscope, other additional equipment

SPM Facts:

Scanner:

Scanrange: DS 95 50 (E) 50 μm x 50 μm x 5 μm
DS 95 200 (E) 200 μm x 200 μm x 15 μm

Accuracy and noise:

Hardware linearized scan motion in z direction
Noise Level < 0.05 nm rms in vertical direction (Z)

Scan Speed: up to 100 $\mu\text{m}/\text{s}$ (DS 95 50)
up to 50 $\mu\text{m}/\text{s}$ (DS 95 200)

Detection:

Self adjusting laser / cantilever deflection system

Min. amplitude setting in AC mode < 1 nm

Electronics:

Triple CPU Design, 1x 32 MHz, 1x16 MHz, 1 FPGA 80 MHz, for autonomous scan operation and realtime processing

Feedback:

32 bit internal resolution

Full digital (PID filtered) or digital/analog (filtered P) operation in contact, dynamic and STM modes

Digital Lock-in based AC detection

Fully digital AC signal synthesizer (Q Booster) and demodulator

Built in automatic self test

Flash memory for fast firmware updating

Automatic Z detector gain adjustment

Supported Modes:

Contact mode, intermittent mode (AC), non-contact mode, frequency modulation mode, lateral force mode, force spectroscopy, EFM, kelvin probe force microscopy, MFM, scanning capacitance microscopy, STM

Stage:

Sample size up to 350 mm

XY movement of sample 150 mmx200 mm, motorized (optional optical referenced 200 nm repeatability)

Joystick and automated XY table control

Max. sample thickness 60 mm

High resolution digital CCD camera

Optional optical microscope facility with bright-, and dark field or DIC imaging

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