



# SAM 2000 Specification protocol

## **SAM 2000: high resolution scanning acoustic microscope**

### **Description:**

The SAM 2000 is a unique high-performance tool enabling non destructive acoustic investigations for dedicated quantitative acoustic analysis, quality control and research applications requiring the highest resolution capability. The SAM combines a user-friendly graphical interface with unique image and measurement performance for high-resolution acoustic imaging and analysis in industrial process control as well as research applications. Acoustic objective lenses up to 2000 MHz are available for the SAM 2000.

SAM 2000 opens new dimensions of non destructive investigation.

### **HF unit:**

- 100 MHz to 2000 MHz tone burst excitation
- pulser for tone burst excitation
- 40dB fixed plus 0-40dB variable receiver amplification
- 500 kSample ADC
- 100-2000 MHz receiver bandwidth
- 300 kHz PRF (pulser reception frequency)

### **Scanner:**

**3 axis acoustic scanning system**, miniaturized for prepared for installation with the Olympus optical microscope

- x;y: 60  $\mu\text{m}$  x 60  $\mu\text{m}$  to 2000  $\mu\text{m}$  x 2000  $\mu\text{m}$  image range
- z axis: 5 mm travel range
- Repeatability x;y: 500 nm
- Repeatability z: 500 nm
- Scanner control-software package
- Line frequency: 10 Hz-50 Hz
- extremely fast 3 axis scanner with miniature design enabling the combination with optical microscopes (top table, inverted), laser scanning

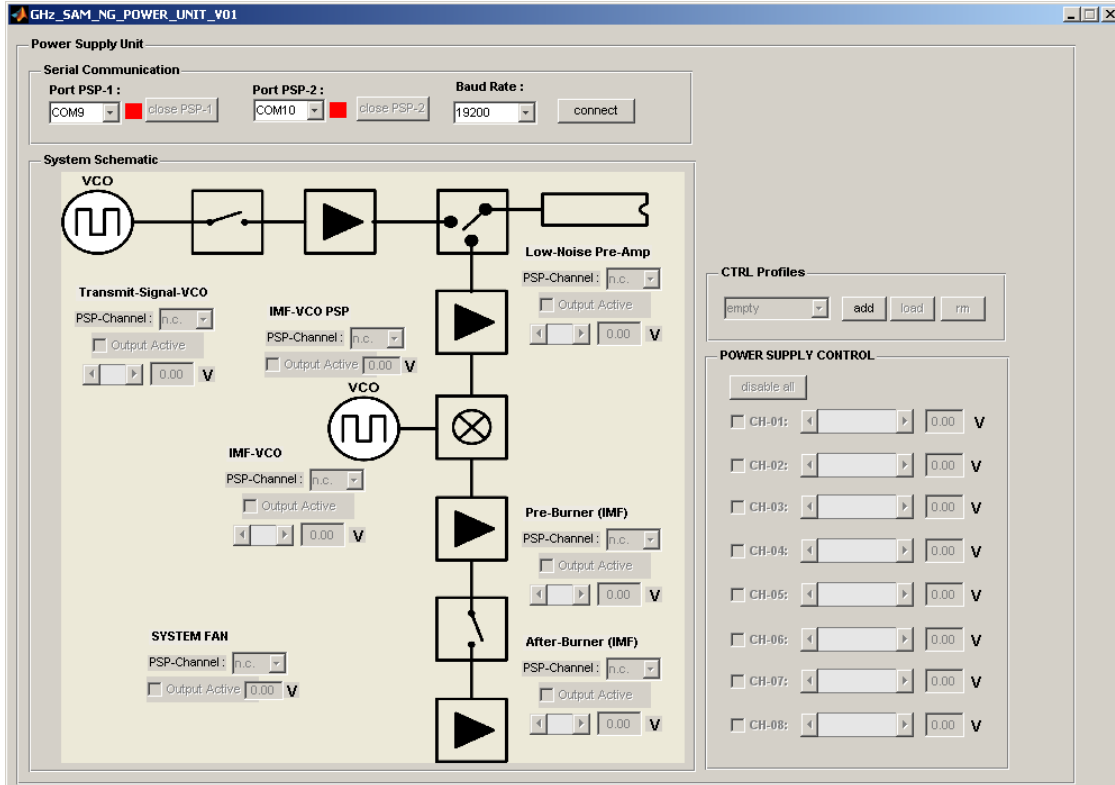
- V(z) analysis
- SAManalysis software package

### **Optical microscope:**

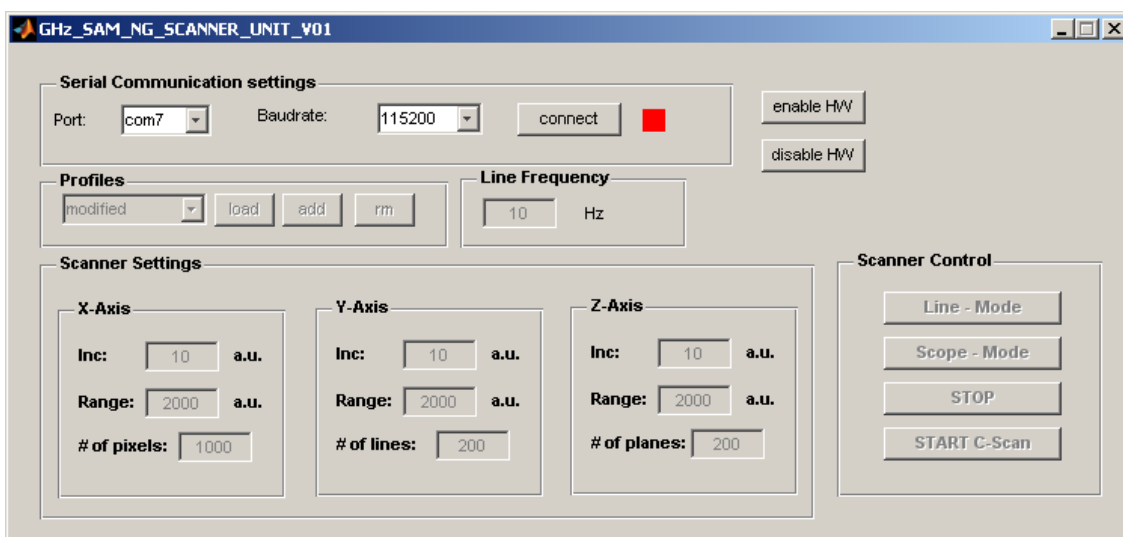
- Focus unit
- condenser adapter
- condenser bright field/dark field
- LED illumination unit
- U-TR30-2-2 trinocular tubus
- WHN10X-1-3wide field ocular
- WHN10X-H-1-3wide field ocular focusable
- U-TV0.63XC-1-7 Camera adaptor
- U-D6BDRE revolver HF/DF/DIC
- BD-M-AD BF adaptor F.BD revolver
- MPLFLN10XBD objective 10x, numerical aperture 0.3, AA 6.5mm
- LMPLFLN20XBD objective 20xnumerical aperture 0.4, AA 12mm
- LMPLFLN50XBD 50xnumerical aperture 0.5, AA 10.6mm
- long unit base plate
- M-MFD-BX motorized focus-drive

Software:

Menu HF



Menu Scanner:



## **Weights**

Scanner table including optical microscope: 300 kg

Main frame: 30 kg

PC rack: 10 Kg

## **Floor stability**

10 kg/cm<sup>2</sup>

## **Electrical supplies**

Nominal AC voltage: 230 V

Nominal frequency: 50 Hz

Power consumption: max. 2 KVA

Average current: 8 A

Max. Current: 16 A

## **Location Requirements**

Recommended room size: 5.0 m x 3.5 m 2.8 m (height)

Service area: Min. 1 m at each side

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