

Components for Surface Analysis

Nanonis AM5 Audio Monitor

“The Sound of Atoms”

Key Features

- Low Noise and Harmonic Distortion
- Four High Impedance Inputs
- Two Independent Headphone Outputs
- Differential Inputs
- Wide Gain Range
- Built-in Preamp/Power Supply

Applications

- Easy, Fast and Intuitive Access to Scanning Probe Microscopy Signals
- SPM Parameter Optimization
- Signal Analysis

Nanonis™



AM5 – Audio Monitor

Listen to the sound of atoms - The AM5 is the interface to the most powerful signal analyzer in the world: The human ear.

The AM5 is a high performance analog audio interface, designed for extracting even the smallest audible details from a measurement signal. It features 4 high impedance input channels with individual gain control, and two independent headphone output connectors.

A benefit in SPM applications

Listen to atoms before a full picture appears on the screen and optimize your measurement settings: the AM5 provides the direct link to the tunneling current signal with no need to wait for a visualized data representation. Optimize your tunneling contact on the fly, find ordered areas on your sample, and hear atomic resolution within one scan line, with no limitations due to pixel number or sampling rates.

How does a good tip sound?

Listen to the quality of the SPM tip, protect it from damage, and recognize instantaneously the effectiveness of tip shaping or cleaning.

Noise analysis made fast and easy

A spectrum analyzer is the perfect tool for detecting and quantifying noise sources, but the visualized image needs interpretation. However listening to a signal one can instantly tell at which frequency the noise is located, and how much noise energy is contained in a certain frequency band.

Flexibility

Each one of the four input channels has its own gain control and clipping indicator. Gain can be adjusted continuously between 1 (0 dB) and 1000 (60 dB), offering the ideal gain for any incoming signal. Two headphone jacks with individual volume control allow users to listen independently to any of the input signals. The powerful output stage of the AM5 can sufficiently drive any dynamic headphone on the market.

High impedance differential inputs

The AM5 uses the same low-noise differential input circuitry of the well proven Nanonis HVA4 high voltage amplifier. The noise performance of the AM5 is not degraded when used in a typical experimental setup. The high input impedance is independent of the gain setting and ensures that the AM5 can be connected to a signal source in parallel with other instruments, without reducing signal levels.

Specifications

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Input channels	4
Headphone jacks	2
Analog Input	BNC
THD (@1 kHz, maximum volume)	0.077% @0dB gain, 0.093% @60dB gain
SNR (@20 kHz BW, input shorted, maximum volume)	91.4 dB @0dB gain, 60.5 dB @60dB gain
Maximum output power (10 Vp-p into 100 Ω)	500 mW per channel
Output impedance	100 Ω
Output noise (10 Hz – 100 kHz) @0dB gain, maximum volume	<0.7 mV RMS, <5.5mV p-p
Output noise (10 Hz – 100 kHz) @60dB gain, maximum volume	<15 mV RMS, <130 mV p-p

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