

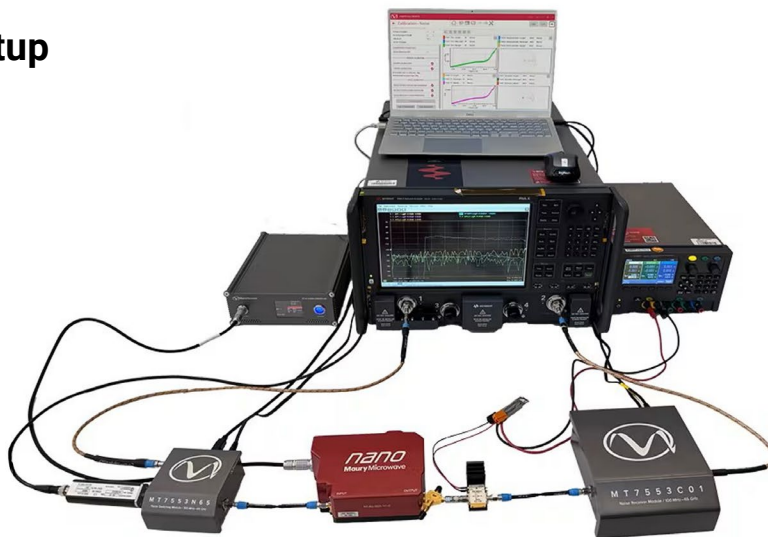
InsightPro™ Noise Figure/Parameter Characterization Software

Components such as low-noise amplifiers (LNA) and transistors require meticulous design to reduce the impact of noise, which can limit the detection of weak signals and degrade system performance.

Key to quantifying a device's noise contribution, noise figure measures the amount of noise a device adds to a signal, relative to an ideal, noiseless device. In other words, it quantifies the degradation in the signal-to-noise ratio (SNR) as a signal passes through a system. A lower noise figure indicates less noise being introduced and better performance. Noise parameters are a set of values that describe how the noise figure and noise performance of a device are affected by varying source impedance and other operating conditions such as temperature and frequency. Together, noise figure and noise parameter characterization provides the data needed to optimize designs, improve efficiency, and meet stringent noise requirements.

The MAPCON 2024 demonstration features the cutting-edge capabilities of InsightPro – a noise figure/parameter characterization software suite from Maury Microwave. Leveraging accurate noise parameter extraction with Maury Microwave automated impedance tuners, the software offers users a guided experience through every stage, from system setup and calibration to verification and result analysis.

Demo Setup



Target Users

Target users include engineers involved in transistor noise model extraction/validation and LNA amplifier design who need a seamless and optimized method to extract accurate noise parameters (including noise figure) across a broad frequency range.

Product Overview

InsightPro Software Suite for Noise Figure/Parameter Characterization

InsightPro is a cutting-edge, wizard-driven software platform developed by engineers for engineers, specifically designed to simplify and enhance the extraction of noise parameters, including noise figure. With its intuitive interface and step-by-step guidance, InsightPro ensures seamless operation from setup to results, empowering users to effortlessly extract accurate noise parameters across a broad frequency range. Designed with ease of use in mind, InsightPro guides customers through every phase of the process, including instrument bench setup, system calibration, calibration verification, and noise parameters extraction.

Noise parameter measurements are enabled through the following InsightPro software modules: IP-MEA-SPA (S-parameter measurements), IP-MEA-NF (noise figure/parameter measurements), and IP-IMP-PAS (passive impedance control). With InsightPro, extracting noise parameters has never been easier, faster, or more reliable. Whether you're in research, development, or production, this innovative platform is your key to mastering noise characterization with confidence and precision.

KEY SPECIFICATIONS AND FEATURES:

- **Instrument Bench Setup:** InsightPro simplifies your setup with an interactive block diagram, making sure all instruments are correctly configured.
- **System Calibration:** The software leads you through a complete calibration process, ensuring your system is optimized for accurate measurements.
- **Calibration Verification:** After calibration, InsightPro provides tools to verify the accuracy, so you can trust your setup is delivering precise data.
- **Noise Parameter Extraction:** Using Maury Microwave's state-of-the-art automated impedance tuners, InsightPro extracts noise parameters from your Device Under Test (DUT) across wide frequency bandwidths with unparalleled accuracy.

More Resources

Visit info.maurymw.com/mapcon-2024 to learn more about Maury Microwave solutions.

