

Siglent Innovative Update Elevates Network Analyzer to New Levels!

November 11, 2024

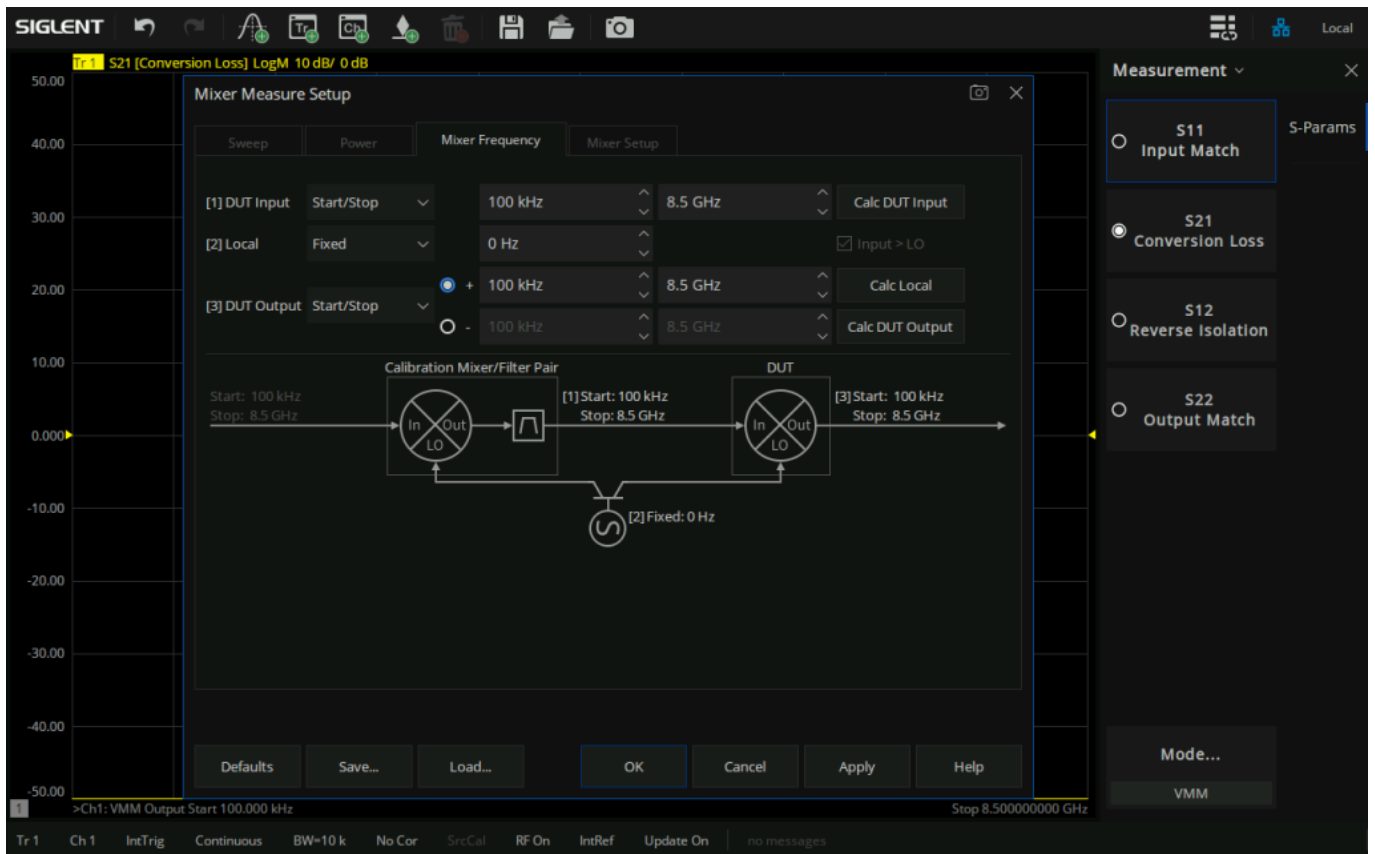
To enhance product performance and optimize user experience, Siglent continues to promote technological innovation and product upgrades, committed to providing users with the best test solutions. Excellent RF performance, flexible hardware configuration and rich software functions complement each other. Through a firmware upgrade, the SNA5000A series vector network analyzers have added vector mixer measurement and gain compression measurement functions, further enhancing their testing capabilities and helping engineers to more accurately and efficiently test and optimize the performance of key RF devices such as mixers and amplifiers.



Vector Mixer Measurements

Traditional performance evaluations generally focus on the mixer's port SWR, isolation and conversion loss/gain characteristics, while vector mixer measurement can simultaneously capture phase and amplitude information. By fixed LO with synchronously sweeping the input and output signals or fixed IN with synchronously sweeping the LO and output signals, calibrated conversion loss/gain, match, group delay and phase shift between devices can be obtained.

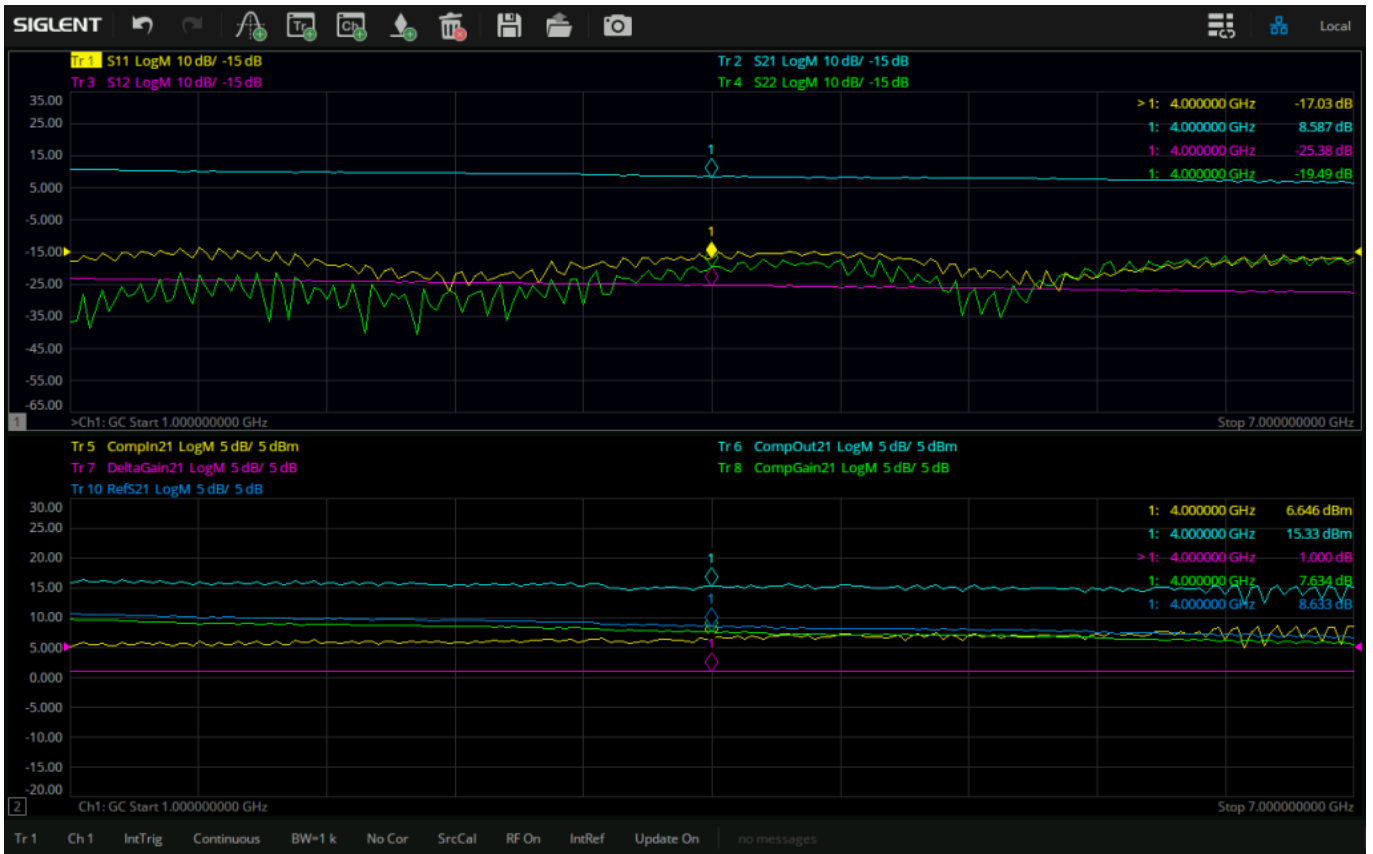
The vector mixer measurement function supports various sweep modes such as linear frequency sweep, power sweep and segment sweep, and allows flexible setting of parameters such as source port power, local oscillator port power, and attenuation. The four-port model has built-in dual signal sources, and the second source can be used as the LO or provide the LO signal by controlling an external signal generator. The intuitive user interface can easily complete the measurement configuration, and the calibration wizard guides the user through calibration process to provide comprehensive and accurate mixer/converter characteristic measurements.



Gain Compression Measurements

Characterizing the characteristics of active devices and determining their compression points are crucial. Traditional S-parameter measurements using vector network analyzers can only obtain compression point at a single frequency, while the gain compression measurement function can complete the measurement of compression parameters and linear parameters such as linear gain, gain at the compression point, input/output power at the compression point, etc. within the operating frequency band through one connection and one calibration.

The gain compression measurement function ensures measurement accuracy through power calibration and calibration wizard, and supports three data acquisition mode: smart sweep, sweep power per frequency and sweep frequency per power to adapt to different test scenarios; it provides linear gain compression, max gain compression, back-off compression, X/Y compression, saturation compression methods to flexibly responding to complex test requirements and ensure comprehensive and accurate characterization of the nonlinear behavior of the device.





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