

Keysight ENA Based PIM + S-Parameter Measurement Solution

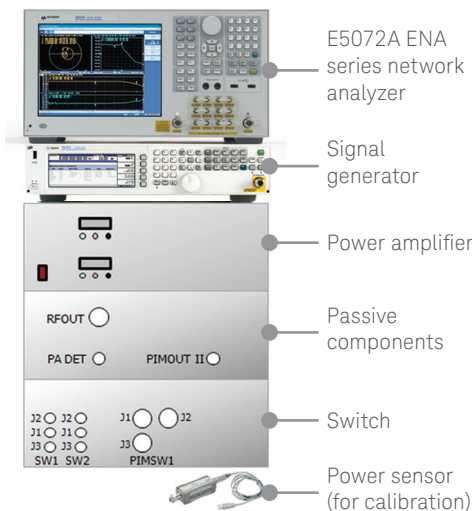
Innovative solution offering flexible, fast and accurate measurement

The ENA based PIM + S-parameter solution is a complete system for testing in production, QA, and R&D at BTS passive component manufacturing. The innovative solution with the ENA series network analyzer offers higher performance than the conventional solutions with lower cost of investment for the PIM and S-parameter measurements. The solution has new key features of flexible configurations, fast and accurate measurements, which can replace the existing test systems for passive component tests. You can add the new capabilities on your current test system including the VNA with the minimum additional cost.

Measuring PIM with network analyzer

The Keysight Technologies, Inc. E5072A ENA series network analyzer with configurable test set is used in the test system. With the direct access capability to the internal receivers, the E5072A measures very low level PIM signal. Also, the E5072A has frequency-offset mode option (E5072A option 008) that enables the source and receiver to sweep at different frequencies.

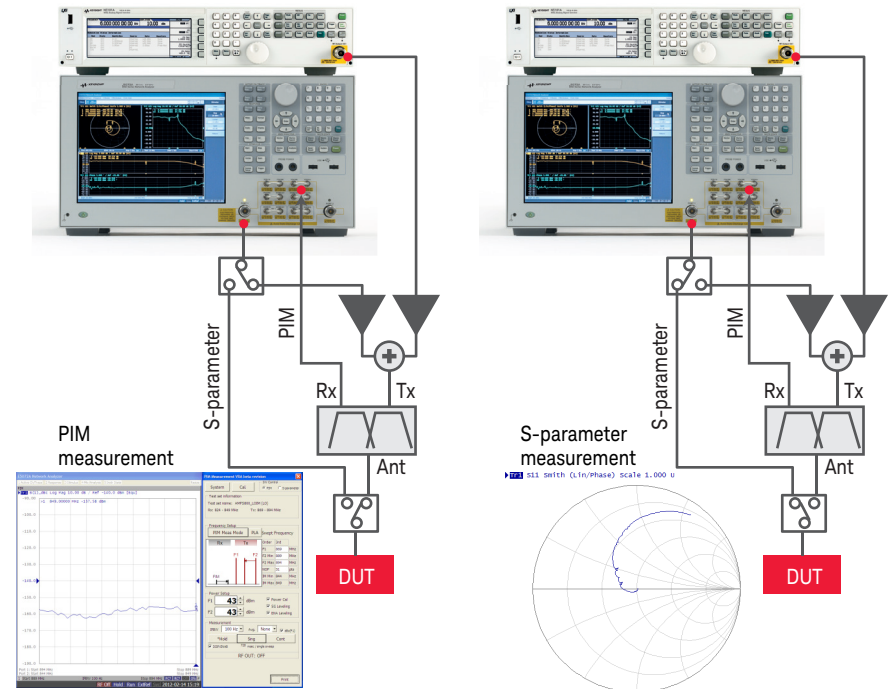
The signal from the E5072A's source is used for one of the fundamental tones, and the power levels of PIM products from the DUT are monitored in the receivers. The signal from an external SG such as Keysight MXG is used for the other fundamental tone.



Meet your future needs with flexible configurations

Today, the evaluation of the BTS passive component is done with individual test stations for PIM (PIM analyzer) and S-parameter (Network analyzer), which requires additional PIM analyzer when the DUT's frequency band is different from the current PIM analyzer.

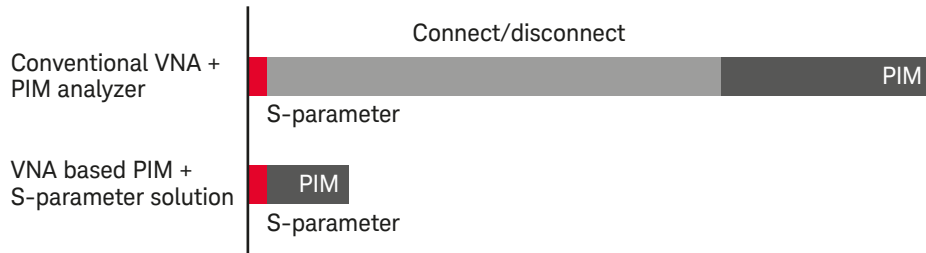
The ENA based system allows greater flexibility in configuration. As it is based on VNA, PIM and S-parameter measurement could easily be integrated in a single solution. In addition, since E5072A and SG operate in a broad frequency range depending on selected options, the multiple band test solution can be configured by using filter or duplexer module and switch matrix to select the frequency band.



Save time with fast measurement

The time required to connect and disconnect the components especially for PIM measurements of passive components may become significantly longer. With the VNA-based solution, both PIM and S-parameter measurements can be performed without changing physical connections of the DUT. It reduces the time you spend for connecting and disconnecting a DUT and significantly improves your overall test throughput.

In addition, the E5072A has superior RF performance including measurement speed which is suited for high-volume manufacturers. Especially its frequency-offset sweep, it eliminates the need for additional time to control other instruments, so the total time of the measurement sequence is dramatically reduced for swept-frequency PIM measurements.



For additional information, refer to following literature.

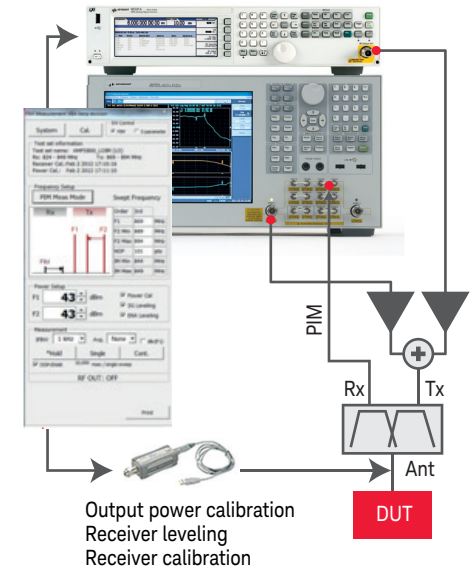
Model name	Part number
Innovative Passive Intermodulation (PIM) and S-parameter Measurement Solution with the ENA – Application Note	5991-0332EN
PIM measurement solution from Rflight (Chinese) – Solution Brochure	5991-0564CHCN

Maximize productivity with accurate measurement

PIM is very sensitive to input power levels to the DUT, so it is essential to calibrate the power level of fundamental tones for accurate PIM measurements.

The E5072A has the capabilities of power calibration techniques which provide great power level accuracy for measurements. Especially its receiver leveling function, it enables you to compensate the variation of power amplifiers' output power and achieve the greater power accuracy at the DUT's input compared to conventional solutions. The accuracy of the PIM measurements in your production environments will increase the test efficiency and product yield.

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