

X-Parameter Measurements

Keysight Technologies and
Maury Microwave

Reduce design cycles by up to 50% with X-parameter measurements

X-parameters* are being used increasingly in place of S-parameters in the design of nonlinear, large signal devices and circuits such as complex power amplifiers, including multi-stage and Doherty circuits. Unlike S-parameters, X-parameters contain detailed and useful information including the magnitudes and phases of distortion products generated by the nonlinear component in response to large signal conditions.

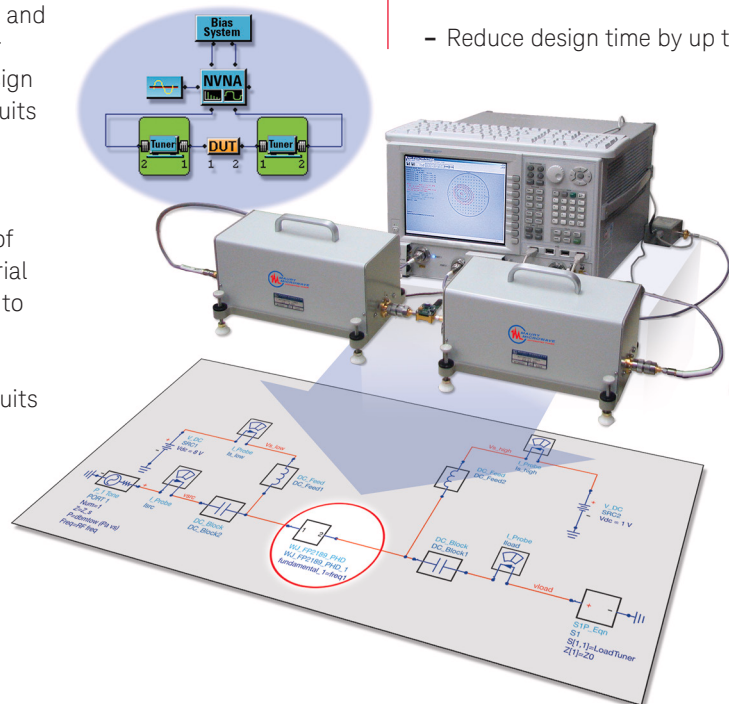
Keysight's load impedance X-parameters option on the PNA-X nonlinear vector network analyzer (NVNA), when used with Maury Microwave's tuners and software, allows you to measure and simulate nonlinear component behavior as a function of impedance, input power, bias and frequency – at all load impedances.

This industry-first approach enables engineers to: extend X-parameter design "cascade-ability" to arbitrarily large load mismatches; automatically measure and simulate accurate, linear and nonlinear behavior over the entire Smith chart under multiple load conditions; and model devices and design multi-stage, Doherty or other complex amplifier circuits with the drag-and-drop simplicity of Keysight's Advanced Design System (ADS).

The arbitrary load impedance X-parameters option of the PNA-X takes the guesswork out of the typical "trial and error" design approach and eliminates the need to "over design" to safeguard against potential errors.

As a result designers of large signal devices and circuits no longer have to compromise on their simulation models. With this new X-parameter measurement solution from Keysight and Maury you can improve your simulation accuracy, minimize the number of design iterations and reduce your overall design time by up to 50%.

- Use X- instead of S-parameters for large signal, nonlinear devices
- X-parameters allow characterization of large signal devices and circuits
- Keysight PNA-X with Maury tuners and software
- Model & design complex, multi-stage amplifiers
- Simulation models no longer have to be compromised
- Reduce design time by up to 50%



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System Components

Keysight Technologies

N5242A	PNA-X network analyzer
N5242A-400	4 ports, dual source
N5242A-419	Extended power range and bias-tees to 4-port analyzer
N5242A-423	Internal combiner and mechanical switches to 4-port analyzer
N5242A-080	Frequency offset measurements
N5242A-510	Nonlinear component characterization
N5242A-514	Nonlinear X-parameters
U9193C	(2 each required), 26.5 GHz Comb Generator
U2002	26.5 GHz USB power sensor (or other Keysight power meter)
Other options are available; contact your local Keysight sales engineer for more details	
Reference documentation publication 5989-8575EN	

Maury Microwave

Tuner – select from:	
MT981BU	0.4 to 4 GHz
MT982EU30	0.8 to 8 GHz
MT983A01	4 to 26.5 GHz
Plus	
MT993B	Power measurement software
MT993D01	X-parameter measurement option
Other options are available; contact Maury Sales for more details	

*“X-parameters” is a trademark of Agilent Technologies, Inc. The X-parameter format and underlying equations are open and documented.

To learn how this solution can address your specific needs please contact

Keysight's solutions partner,
Maury Microwave

www.keysight.com/find/maurymw



Keysight & Solutions Partners
Extending our solutions to meet your needs

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to

www.keysight.com/find/solutionspartner

Maury Microwave has been in business for 50+ years and has become the world's leading manufacturer of laboratory devices and system components, with an emphasis on device characterization and automated tuning systems.

www.maurymw.com

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