Modelithics®

World's Best RF and Microwave Simulation Models

Unleash Compact Transistor Models with X-Parameter Technology

Modelithics X-Parameter Model Conversion Service

Modelithics, a Keysight Technologies Solutions Partner and provider of precision measurement and modeling services, offers X-Parameter* Model Conversion Service to convert existing compact models in Keysight ADS into X-Parameter-based models. The X-Parameter models are then available for use in EDA (Electronic Design Automation) software tools with X-parameter capabilities (such as Keysight Genesys, ADS, GoldenGate, and SystemVue platforms). The generated X-parameter models retain the accuracy of the compact version, while offering faster simulation speed. This service provides flexibility to designers by expanding compatibility of existing nonlinear device models from manufacturers, making them available for use in multiple EDA tools.

Non-Linear X-Parameters

- Provide mathematically correct extensions of S-parameters to large-signal conditions with fully nonlinear framework that provides both the magnitude and phase of the distortion.
- Cover both large-signal and small-signal conditions, and capture complete linear and nonlinear behavior at all loads.
- Characterize the amplitudes and relative phase of harmonics generated by components under large input power levels at all ports.

Modelithics X-Parameters Conversion Service

- Generate non-linear X-Parameter models from existing compact models to make them available for multiple EDA tools.
- Converted X-Parameter models offer the same accurate large signal prediction, such as power compression and load contours with much faster simulation speed and better convergence characteristics.
- Customer Input needed: access to non-linear model if not available on internet or already in Modelithics NLT Library. Details on desired model use in terms of frequency, operating bias and impedances.

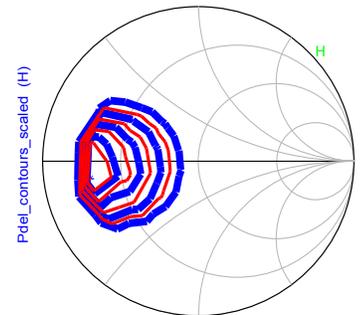### Example Converted X-Parameter Model in Keysight Genesys
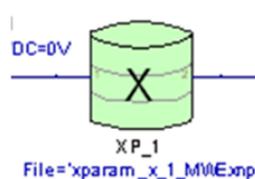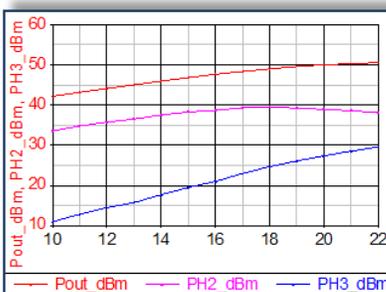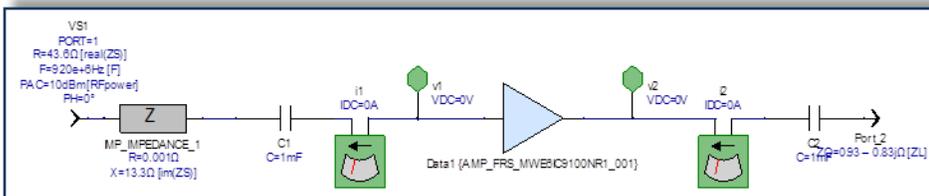
Precision Measurements and Models You Trust

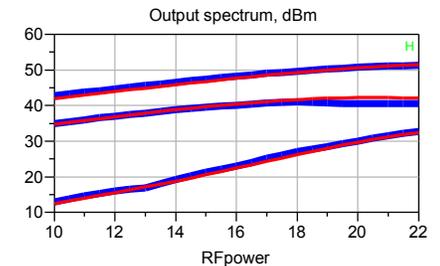## Similar Accuracy, Faster Simulation Speed

An example X-parameter model generated from a compact version for a 100W LDMOS device is shown below.

indep(Pdel_contours_scaled) (0.000 to 28.000)

Comparison of the delivered power contours between the compact model and the X-parameter version shows good agreement.

The simulated output spectrum up to 3rd harmonic between the compact and X-parameter versions of the 100W LDMOS device is shown to present good match.
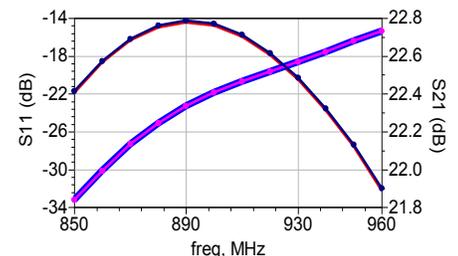
Simulated S-parameters from two versions of the 100W device model confirm the X-parameter model represents the compact version very well.