

## Modelithics EXEMPLAR Library For Keysight PathWave Advanced Design System (ADS)

ex · em · plar (n.) Something that serves as a typical example or excellent model.

### Overview

The Modelithics EXEMPLAR Library is an expanded trial library containing more models than the free SELECT+ Library, which can be downloaded online at [www.Modelithics.com/Model/FreeModels](http://www.Modelithics.com/Model/FreeModels). The EXEMPLAR Library is a representative subset (*about 15%*) of all models available in the Modelithics COMPLETE Library, which contains passive CLR component and filter models, non-linear transistor and diode models, the Modelithics SUBSTRATE Library, and more. EXEMPLAR is designed to include all models needed to run the many example tutorial projects available on the Modelithics website.

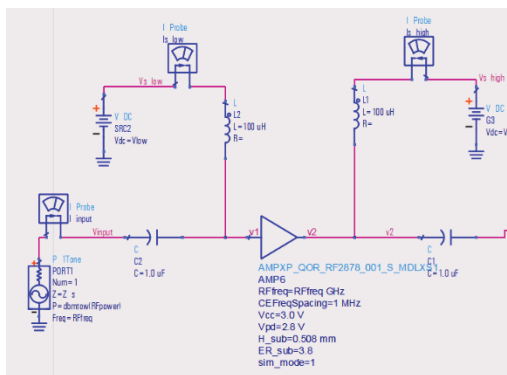
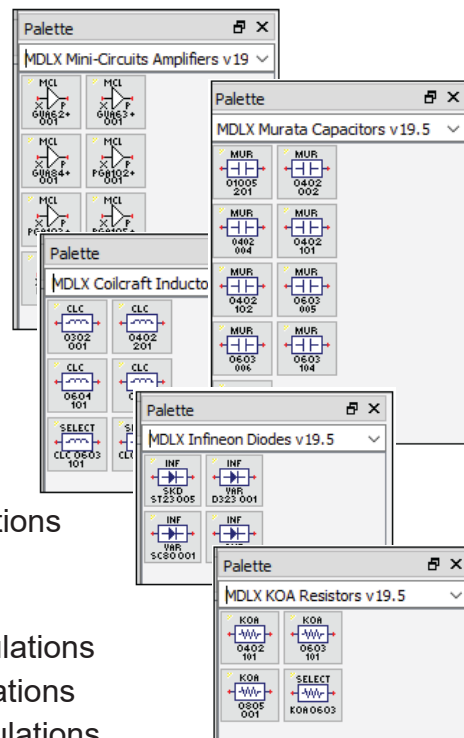
The EXEMPLAR Library is available to approved customers for a FREE trial and is also available to students and faculty members through the Modelithics University Program for educational wireless electronic design projects. See [www.Modelithics.com/Model/Exemplar](http://www.Modelithics.com/Model/Exemplar) for more details.

### Model and Library Features

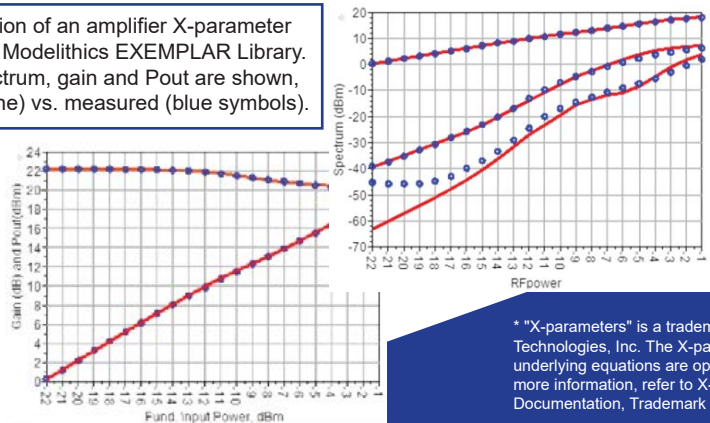
- Modelithics models offer scalability by substrate, part value, pad size, temperature, and other characteristics.
- The models are engineered to simulate typical device response including related parasitics.
- The Modelithics EXEMPLAR Library includes many example design projects, and all of the Modelithics models needed to run those projects.
- Modelithics SELECT+ and SUBSTRATE libraries are included in Modelithics EXEMPLAR for convenient access.

### Example Projects in Modelithics EXEMPLAR

- Part Value Tuning
- Part Value Optimization
- Substrate Scaling
- Statistical Analysis
- Varying Bias Simulations
- Power Sweep
- Varying Temperature Simulations
- Harmonic Balance
- Noise Parameters
- 1/f Noise
- 2-Tone Intermodulation
- Load Pull Simulations
- Amplifier Model Simulations
- Filter Model Simulations
- Resonator Simulations
- Transformer Simulations



HB simulation of an amplifier X-parameter model in the Modelithics EXEMPLAR Library. Output spectrum, gain and Pout are shown, model (red line) vs. measured (blue symbols).



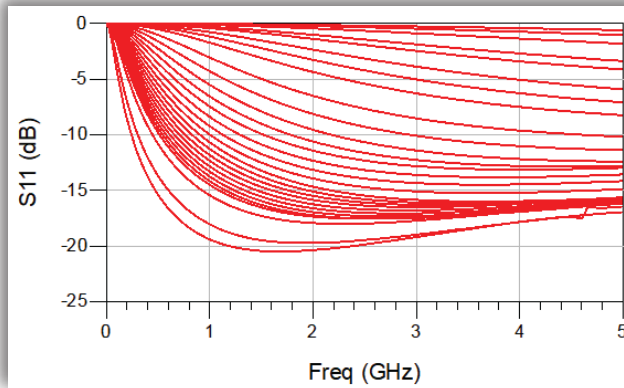
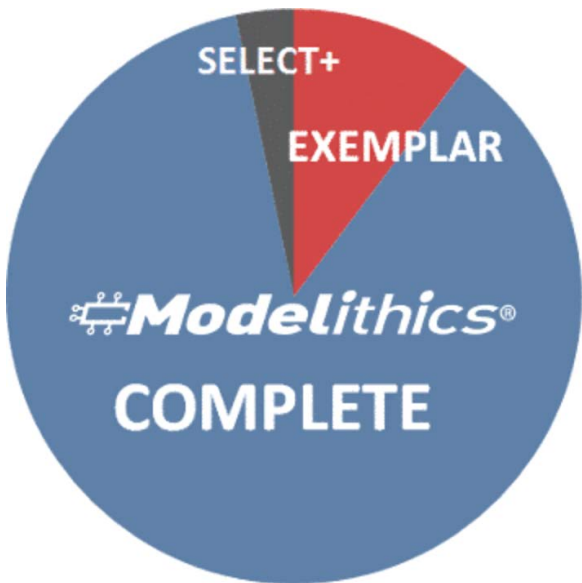
\* "X-parameters" is a trademark of Keysight Technologies, Inc. The X-parameters format and underlying equations are open and documented. For more information, refer to X-parameters Open Documentation, Trademark Usage & Partnerships.

# Components in the Modelithics EXEMPLAR Library for Keysight PathWave ADS

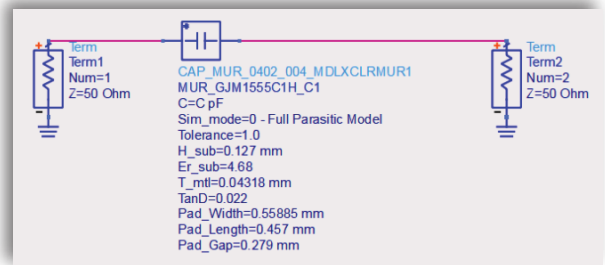
NLT	SLC			NLD
<b>Avago</b> AT-41533, AT-64023	<b>Avago (Amplifier)</b> MGA86576	<b>MACOM (PIN Limiter)</b> MASWSS0204	<b>Freescale (Amplifier)</b> MVE6IC9100NR1	<b>Infineon</b> BAS70, BB535, BBY51-02W
<b>Excelsis</b> EFA060BS5	<b>MACOM (Package)</b> 2690-1011	<b>Mini-Circuits (Amplifiers)</b> GVA-62+, GVA-63+, GVA-84+, PGA-102+, PGA-103+, PGA-105+, PHA-1+, PHA-22+	<b>Maxim (Amplifiers)</b> MAX2371, MAX2373	<b>MACOM</b> MLP 7110
<b>Infineon</b> BFP420, BFP949	<b>Vanguard (Transformer)</b> 100205			
<b>MACOM</b> NPTB00004A	<b>Murata (Resonators)</b> DRR030KE1R2, DRM020KER93	<b>Qorvo (Amplifiers)</b> RF5110G, RF2132	<b>Maxim (Mixer)</b> MAX2681	<b>On Semiconductor</b> MMDB301LT1
<b>Motorola</b> MRF1570T1	<b>AVX (Coupler)</b> CP0603	<b>Toyo (Filter)</b> HFF-101B	<b>Sawtek (Duplexer)</b> 856331	<b>Rohm</b> RB715F
<b>NXP</b> BFS540	<b>CLR</b>			<b>Skyworks</b> SMV1147-011LF
<b>SEDI</b> FLL120MK	<b>AVX (Capacitor)</b> Accu-P (01005, 0402)	<b>Coilcraft (Inductors)</b> 0302CS, 0402CS, 0604HQ, 0805CS	<b>TDK (Inductor)</b> MLG0402Q	<i>More to come! New models are added continually. Visit our website for an updated, complete list, and to see our available Pre-Release models (www.Modelithics.com)</i>
		<b>KOA (Resistors)</b> RK73x1E, RK73x1J, RK73x2A	<b>Toko (Inductor)</b> LL1608-FSL	
	<b>ATC (Capacitors)</b> 100A, 600L, 600F	<b>Passive Plus (Capacitors)</b> 0402N, 0603N	<b>Johanson (Capacitor)</b> R15S	
	<b>Barry (Resistor)</b> RK0603ZZ	<b>Murata (Capacitors)</b> GRM022, GJM15, GRM1555C, GRM155R7, GRM188R71H, GQM188, GRM1885C	<b>Johanson (Inductor)</b> L-05Cxxx	
	<b>KEMET (Capacitors)</b> CBR04, C0805(X7R)		<b>Vishay (Capacitors)</b> HPC0402A, VJ0402D	

SELECT+			
<b>AVX (Capacitors)</b> 600S, Accu-P	<b>Infineon (Schottky Diode)</b> BAS40	<b>Mini-Circuits (Filter)</b> HFCN-2700+	<b>TDK (Inductor)</b> MLG1608B
<b>Barry (Resistor)</b> RE0805CT	<b>Johanson (Capacitor)</b> R07S	<b>Mini-Circuits (Attenuators)</b> RCAT & YAT	<b>Toko (Inductor)</b> LL2012-FHL
<b>Coilcraft (Inductors)</b> 0603CS, 0603HP	<b>KEMET (Capacitor)</b> CBR06	<b>Nitronex (GaN HEMT Package)</b> NPT1012	<b>Würth Elektronik (Inductor)</b> WE-MK
	<b>KOA (Resistor)</b> RK73x1J	<b>NXP (MOSFET)</b> BF1211 & BF1212	<b>RJR (Package)</b> QFN01 LCP
<b>IMS (Attenuator)</b> IMS2533	<b>Murata (Capacitor)</b> GRM2165C2A	<b>Presidio (Capacitor)</b> BB0502X7R104M	<b>Qorvo (Amplifier)</b> RF2878

**EXEMPLAR:** 71 Models representing 3,382 parts  
**COMPLETE:** >750 Models representing >18,000 parts



Discrete part value sweep using a Modelithics capacitor model of the Murata GJM1555C family from 0.1 to 20 pF



To request a **FREE** Trial, contact Modelithics at [sales@modelithics.com](mailto:sales@modelithics.com) or visit [www.Modelithics.com](http://www.Modelithics.com)