Modelithics®
Accelerating Your Design Success!

Modelithics Library and Licensing Options

Accelerate your design success with Modelithics' libraries of top-quality circuit simulation and 3D Geometry models for all types of RF & microwave components and semiconductor devices for use in many popular Electronic Design Automation (EDA) tools. Modelithics' premium product is the **Modelithics COMPLETE Library** containing measurement-based **Microwave Global Models™** for a multitude of commercially available passive component families, as well as non-linear diode models, non-linear transistor models, and system-level component models. Modelithics product offerings also include the **Modelithics COMPLETE+3D Library**, **3D Library**, **mmWave Library** and **System Components Library™**. The Modelithics library are indispensable collections of highly scalable and non-linear simulation models for an extensive range of passive and active devices engineered to enable designers to go from concept to product faster and easier. These models for discrete die, surface mount and packaged devices are a must-have for anyone involved in PCB-based RF & Microwave circuit or module design.

Eliminate bench tuning and concentrate on your next design with accurate parasitic simulation. The versatility and accuracy of our substrate and part value-scalable models help to ensure proper component selection at the simulation stage. Our thoroughly validated non-linear active device models enable accurate predictions of large-signal as well as small-signal and noise performance, for a wide range of circuit design requirements. As the needs of design engineers vary, we offer a variety of library options for consideration as well as compatibility with 10 of today's leading EDA software tools.

Supported Simulators

- Ansys® HFSS™
- NuHertz FilterSolutions
- Cadence AWR Design Environment® Platform
- Cadence Spectre® RF
- Cadence Clarity™ 3D Solver
- Keysight Advanced Design System (ADS)
- Keysight RF Synthesis (Genesys)
- Keysight System Design (SystemVue)
- Keysight RFPro
- Sonnet Suites™
- Mathworks MATLAB®
- SIMULIA® CST Studio Suite®

Modelithics Library Options

Modelithics COMPLETE+3D Library for Keysight ADS / RFPro - Includes the Modelithics COMPLETE Library™, which is an indispensable collection of circuit simulation models for passive & active devices, including Modelithics enhanced **Microwave Global Models™** as well over 300 full-wave 3D Geometry models for Keysight RFPro.

Modelithics COMPLETE+3D Library for Ansys HFSS - Includes over 600 3D Geometry models plus Modelithics extensive collection of CLR component circuit simulation models representing 30,000 components. The 3D models are based on the physical characteristics of each component and can be used in full wave 3D electromagnetic (EM) simulation, including component interaction and effects of parts in close proximity.

Modelithics COMPLETE Library - Consists of Modelithics' vast collection of circuit simulation models, including Microwave Global Models™ for passive devices and models for active devices, as well as plus S-parameter models and the Modelithics Substrate Library. The Modelithics COMPLETE Library includes models from ~86 vendors, representing 31,000 components.

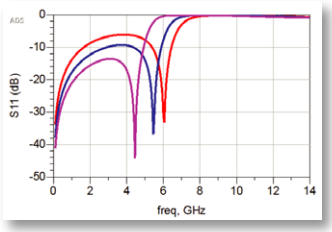
Modelithics Library for MathWorks MATLAB and SIMULIA CST Studio Suite - Brings incredible flexibility and accuracy to electronic designs. Modelithics models are scalable, allowing design details, such as substrate and pad characteristics, to be specified and simulated. The Modelithics Library includes thousands of popular devices with modeling accuracy to deliver first-pass design success.

Modelithics 3D Library for Cadence® Clarity™ 3D Solver - Includes nearly 400 3D Geometry models. Highly accurate encrypted full-wave EM analysis models are included for components such as inductors, resistors, filters, connectors, and packages from many of today's leading suppliers. All Modelithics 3D EM models are based on physical dimensions and material properties.

mmWave Library* - A collection of models focused on supporting the next generation of cellular communication standards. All models in the mmWave Library are validated to a minimum of 30 GHz, with some validated up to 125 GHz!

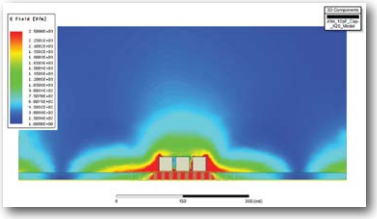
System Components Library** - A collection of simulation models for system-level components such as amplifiers, filters, attenuators, and more. These models for real-life components make it possible for designers to simulate system chains that account for real-world factors like amplifier nonlinearity and much more.

Single Vendor Sub-Library* - Includes all models for one selected vendor. EXAMPLE: Johanson, Kyocera-AVX, Smiths Interconnect, Passive Plus, etc. Choose from the 80+ vendors within the



Simulated S-parameters of a simple low-pass filter on three different substrates. Modelithics models account for substrate parasitics.

------Red = 4 mil substrate
------Blue = 16 mil substrate
------Pink = 60 mil substrate



Magnitude E-field simulation of 3 capacitors in shunt configuration in close proximity.

**Sub-Library of the Modelithics COMPLETE Library.*
***The System Components Library is a standalone library for Keysight SystemVue and is a sub-library for Keysight ADS, Keysight Genesys, and Cadence AWR.*

REQUEST A FREE TRIAL TODAY!
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Modelithics License Options

Floating – There are various options available for floating licenses.

A floating license gives shared usage of one or more licenses over a network within a defined area. The user(s) would need access to the server in order to use the license.

- **Single-Site: Valid for a 1-mile radius**
- **Single Time Zone**
- **Multi-Time Zone**
- **North American**
- **Worldwide**

Cloud – A cloud license is similar to a floating license. This option removes the need for IT overhead to update and maintain the license server, upgrades, adding new seats, etc. All license administrative activities are handled by Modelithics. License configuration on the client is simplified to saving a file. The client configuration is done one time and all licensing updates are handled in the cloud.

Node-Locked – Licenses are tied to a single user of a particular computer.

Dongle-Locked – Shared usage of a single license using a hardware lock. Licenses are tied to a USB dongle key. Dongle must be an RLM compatible dongle. Dongle hardware is available for purchase.

High-Performance Computing (HPC) Feature - The HPC license feature enables concurrent use of a single license seat across multiple machines for running simulations. With HPC, simulations can be batched and distributed across several computers without requiring additional license seats for each machine. This feature is available for both floating and cloud-based licenses. (Available for the Modelithics COMPLETE / COMPLETE+3D Libraries only for: Keysight ADS, Keysight Genesys, Cadence AWR and Ansys HFSS.)

Roaming – Roaming licenses are a feature that can be added to your cloud or floating license for users that need to travel outside the defined licensing area or go off the network. A user checks a license out from the license pool for a specified limited time. The license is unavailable until the user checks the license back in or the time expires.

Supported Software

Modelithics uses **Reprise Software RLM** licensing for all library versions 19 and above.

Operating systems we support:

- **Microsoft Windows (10 & 11)**
- **Red Hat Enterprise Linux (RHEL) (7 & 8)**

Don't just use any models in your designs... Use Modelithics Advanced, Highly Accurate Models!

To discuss the library and licensing options that best suit your needs, contact:

Sales@Modelithics.com

Know Your ROI

Modelithics has designed an ROI Calculator that is available for customers to use to enter their design costs to showcase the amount of savings with the Modelithics models. In just one or two design projects you will likely receive full return on your investment of the Modelithics COMPLETE Library. Try out the **Modelithics ROI Calculator** with your details.

www.Modelithics.com/FreeTools/ROI

The published articles outlined below from High Frequency Electronics will provide more in-depth details on using the ROI calculator as well as a customer testament of the time and money saved by using Modelithics models.

Using Component Models to Achieve First Pass Success – A Transmitter Case Study: Part 1, Harmonic Filter Design

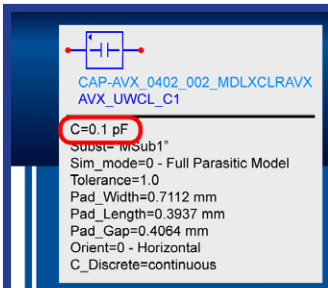
Using High Accuracy Models to Achieve First Pass Design Success - A Transmitter Case Study: Part 2, Power Amplifier Design

Advanced Model Features

- **3D Models**
- **Advanced Pad Features**
- **Discrete Values & Optimization**
- **EM Co-Simulation**
- **Measurement Based**
- **Microwave Global Models™**
- **Orientation Selectable**
- **Pad Mode**
- **Pad Scaling**
- **Part Value Scalable**
- **S-Parameters**
- **Sim Mode**
- **Substrate Scalable**
- **Well Documented**

Microwave Global Models™

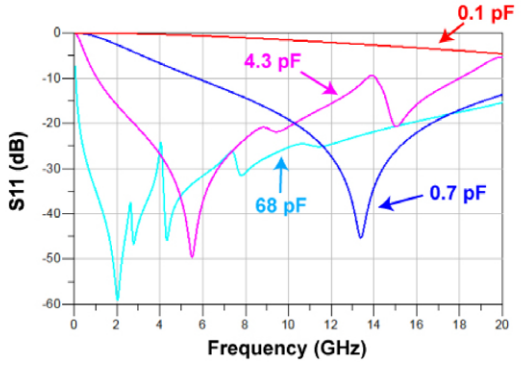
Modelithics Microwave Global Models include many advanced features and are available within the Modelithics COMPLETE Library™. Microwave Global Models can cover a full range of part values from a vendor component series within one model. Advanced features include:



- **Part Value Scaling**
- **Substrate Scaling**
- **Solder Pad De-embedding**
- **Statistical Simulations**
- **Pad Scaling**
- **Horizontal/Vertical Orientation**
- **Continuous or Discrete Part Value Scaling**

Part Value Scaling:

A single Modelithics Microwave Global Model can cover the full range of part values for a vendor component series.



Shown are S11 and S21 results when simulating the CAP-VIS-0402-102 model in a series configuration with different capacitance values. Results scale appropriately according to the value.

**Not all features available to all models*

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