



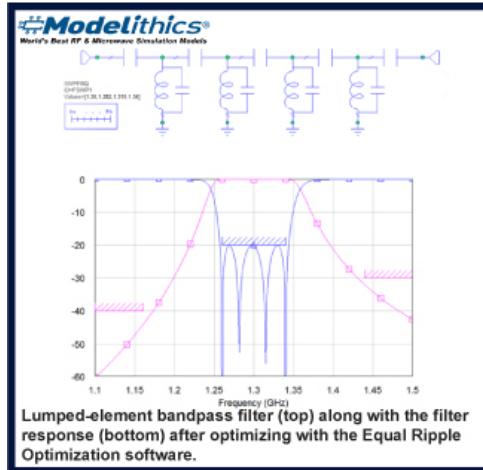
Model Rap™



Modelithics Blog Series

Model Rap Blog Uncovering the ExpertMode Parameter, Part 1 May 2022

The "ExpertMode" parameter is a little-known parameter included within Modelithics' **Microwave Global Models™** for Cadence® AWR Design Environment®. In this blog post, the first of a two-part series, discover what this parameter is all about and how it's connected to an equal-ripple filter optimization tool.



[Read the Full Blog Here!](#)

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Additional Literature/Videos Regarding This Blog Topic

Application Note 066
Filter Design Using Discrete Part-Value Optimization in Cadence AWR Design Environment

Optimization is often required to achieve desired performance when designing RF filters and other high-frequency circuits with real-world simulation software tools. As an example, optimizing a lumped-element filter involves adjusting the values of its lumped components until the filter achieves an ideal frequency response. But since the component values have been determined via optimization, they may still need to be adjusted to the closest discrete, or "real-life," manufacturing part values. Depending on the design's complexity, this extra step can create a lot of extra steps for the designer.

Of course, additional simulations must be performed after changing the optimized part values to the nearest available manufacturer part values. And if an optimized value falls roughly halfway between the two closest available manufacturer part values, one may need to experiment to determine which of the two is the better choice.

[Application Note 066: Filter Design Using Discrete Part-Value Optimization in Cadence AWR Design Environment](#)

Application Note 073
Filter Design Flow in Cadence AWR Design Environment with Substrate Scalable Models

Substrate scalability is included within nearly all Modelithics' **Microwave Global Models™** for passive components. This feature is significant because the high-frequency performance of a component can have a strong dependence on the substrate on which it is mounted. Therefore, a circuit's overall performance depends on the substrate used for the design.

In this application note, we will demonstrate a filter design flow using different substrates combined with Modelithics Microwave Global Models. The process begins with ideal components and then progresses to using full parasitic models that account for all real-world parasitic, solder-patch, and substrate effects. The results show how substrate loss has a significant effect on filter performance. All component models used in this application note are included in the [Modelithics Global Models™](#) library.

[Application Note 073: Filter Design Flow in Cadence AWR Design Environment with Substrate Scalable Models](#)

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