

RF High Power Product Design Kits for Keysight Advanced Design System

Overview, FAQ and Installation



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I. RF HIGH POWER MODELS AND DESIGN KIT OVERVIEW

All RF high power product MET, FET² and Root models available in Advanced Design System (ADS) design kits include package, bond wire and internal matching network effects.

Installation of the RF High Power Model Kit is required to run all RF high power ADS models.

MET and FET² Models

The MET and FET² models for RF high power transistors and RF ICs are nonlinear models that simulate electrical phenomena and account for dynamic self-heating. The MET and FET² models are capable of performing small-signal, large-signal, harmonic-balance, and transient simulations. Because of the ability to simulate self-heating, the MET and FET² models enable circuit designers to predict prototype performance more accurately.

RF high power product MET and FET² models are available for Keysight® EEsof® ADS using the RF High Power Model Kit.

Root Models

The Root model is an Keysight EEsof proprietary model. It is a table-based model and does not account for self-heating effects. The Root model is available for use in Keysight EEsof ADS only.

RF High Power Model Kit

The RF High Power Model Kit contains the model definitions and the nonlinear electrothermal model required to run the product models. Only one RF High Power Model Kit is required per ADS installation.



Attention: The RF High Power Model Kit version installed must match the ADS installation version, i.e., if ADS is updated to a later version, the corresponding RF High Power Model Kit must also be installed. Conversely, if an earlier version of ADS is used, the corresponding RF High Power Model Kit must then be installed.

Product Model Design Kit

RF high power model design kits are implemented as an ADS design kit and should be installed by following the Keysight EEsof ADS design kit installation instructions.

This design kit is for a single RF high power product. Multiple product model design kits can be installed and used simultaneously.

Model Library (for models introduced in 2006 and earlier)

The Model Library is a design kit that contains a selection of RF high power models introduced in 2006 and earlier. Only one RF High Power Model Library is required per ADS installation. Revision 4 of the High Power Model Library requires an RF High Power Model Kit to run the simulation code.



Attention: All RF high power models released after 12/2006 will be available only as a Product Model Design Kit. Models released in 12/2006 and earlier are available in the RF High Power Model Library.

II. PLATFORMS SUPPORTED

ADS Version	RF High Power Models	Platforms Supported ⁽¹⁾					
		MS Windows [®]		Linux [®]		Solaris [®]	
		32-bit	64-bit	32-bit	64-bit	32-bit	64-bit
ADS2015	Product Model Design Kits with RFPDK ⁽²⁾	NA	Y	NA	Y	NA	NA
	External Model Library with RFPDK ⁽²⁾	NA	Y	NA	Y	NA	NA
ADS2014	Product Model Design Kits with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
	External Model Library with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
ADS2013	Product Model Design Kits with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
	External Model Library with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
ADS2012	Product Model Design Kits with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
	External Model Library with RFPDK ⁽²⁾	Y	Y	NA	Y	NA	NA
ADS2011	Product Model Design Kits with RFPDK ⁽²⁾	Y	Y	Y	Y	N	N
	External Model Library with RFPDK ⁽²⁾	Y	Y	Y	Y	N	N
ADS2009 Update 1	Product Model Design Kits with RFPDK ⁽²⁾	Y	Y	Y	Y	N	N
	External Model Library with RFPDK ⁽²⁾	Y	Y	Y	Y	N	N

RFPDK = RF High Power Design Kit Y = supported by Freescale N = not supported by Freescale
 from <http://www.freescale.com/rf/adsmodels> NA = not supported by Keysight EEsof EDA

(1) See ADS installation guide for a listing of platforms and operating systems supported.

(2) Installation of the RF High Power Kit is required to run all RF high power ADS models.

III. KEYSIGHT ADVANCED DESIGN SYSTEM – DESIGN KIT AND INSTALLATION

ADS Design Kit

A design kit is a logical grouping of files related to a set of ADS components. The design kit structure is self-contained to provide easy transfer between different users or computer platforms. All component information needed by ADS is stored within the design kit.

Installation

Use the following links and information to obtain instructions for unzipping, installing and setup of design kits. Note that the design kit infrastructure has been developed and tested to provide a standard method for building, testing, installing and using design kits within ADS.

[Keysight EEsof EDA \(http://www.keysight.com/find/eesof\)](http://www.keysight.com/find/eesof) > [Knowledge Center](#) > Advanced Design System Documentation (requires login)

Click on any of the above links to get to the level of information needed.

IV. INSTALLATION FAQ AND SUPPORT

Below is a table of common problems and answers to questions that may help you complete your installation. Verify that the Product Model Design Kits were installed correctly by reviewing the ADS Design Kit installation procedures before attempting to troubleshoot problems.

Problem	Possible Solution
<p>The Product Model Design Kit palette exists within the schematic window, and I can pick and place model parts to the schematic; however, when I simulate, I receive the following error messages within the simulator window:</p> <p>Warning detected by HPEESOFSIM during netlist parsing.</p> <p>Error detected by HPEESOFSIM during netlist parsing 'FSLFET1' is an instance of an undefined model ...'</p>	<p>Verify that the FSL_TECH_INCLUDE element exists in the top-level circuit.</p>
<p>After ADS2014 and later is open, the desired Product Model Design Kit is in the schematic palette, but an error message appears:</p> <p>Failed to get data for library "Single_Model_DK_tech"</p>	<p>This error message is caused by a library naming issue in previous versions for ADS. This error does not cause any model performance or circuit simulation issues and should be ignored.</p>
<p>After ADS2011 and later is open, the desired Product Model Design Kit does not appear in the schematic palette or within the Component Library browser window.</p>	<ol style="list-style-type: none"> 1. Verify the design_kit directory and all of its subdirectories are present in the ADS custom directory. 2. Verify the design kit exists within the workspace.
<p>After ADS2009U1 is open, the desired Product Model Design Kit does not appear in the schematic palette or within the Component Library browser window.</p>	<ol style="list-style-type: none"> 1. Verify the design_kit directory and all of its subdirectories are present in the ADS custom directory. 2. Verify the design_kit directory exists within the design kit and the ads.lib file exists inside.
<p>Under Linux/Unix, when starting ADS2009U1 following the installation, the messages do not appear in the terminal window upon startup:</p> <p>Loading Freescale Semiconductor's ADSv 2006U3p1p0 RF High Power Model Library ...</p> <p>Freescale Semiconductor's ADSv 2006U3p1p0 RF Power ADS2006U3 DK Library Load Completed</p>	<ol style="list-style-type: none"> 1. Verify the design_kit directory and all of its subdirectories are present in the ADS custom directory. 2. Verify the design_kit directory exists within the design kit and the ads.lib file exists inside.

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Problem	Possible Solution
<p>The desired Product Model Design Kit palette exists within the schematic window; however, when picking and placing an element, I receive several message windows stating the component symbol not found.</p>	<p>Verify the design_kit directory and all of its subdirectories are present in the ADS custom directory.</p>
<p>The Product Model Design Kit palette exists within the schematic window and I can pick and place model parts to the schematic; however, when I simulate, a window pops up stating:</p> <p>OPEN_SIMULATOR ERROR</p>	<p>The RF High Power Model Kit version installed must match the ADS installation version, i.e., if ADS is updated to a later version, the corresponding RF High Power Model Kit must also be installed. Conversely, if an earlier version of ADS is used, the corresponding RF High Power Model Kit must then be installed.</p>
<p>The Product Model Design Kit palette exists within the schematic window, and I can pick and place model parts to the schematic; however, when I simulate, I receive the following error messages within the simulator window:</p> <p>Error detected by hpeesofsim in loading dynamic device code during netlist flattening. Load of dynamic code failed...Dynamic linker gave reason: "The specified procedure could not be found."...</p>	<p>The RF High Power Model Kit version installed must match the ADS installation version, i.e., if ADS is updated to a later version, the corresponding RF High Power Model Kit must also be installed. Conversely, if an earlier version of ADS is used, the corresponding RF High Power Model Kit must then be installed.</p>

Freescal Support

Refer to [RF High Power Model Help](#) to submit a Service Request (SR) if you are experiencing installation and/or use problems with any of our model libraries or design kits.

How to Reach Us:

Home Page:
freescale.com

Web Support:
freescale.com/support

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