AMP Product Model Library Manual for Cadence® AWR® Microwave Office®

Library Version: **V16p00**
Date: **December 21ᵗʰ 2022**

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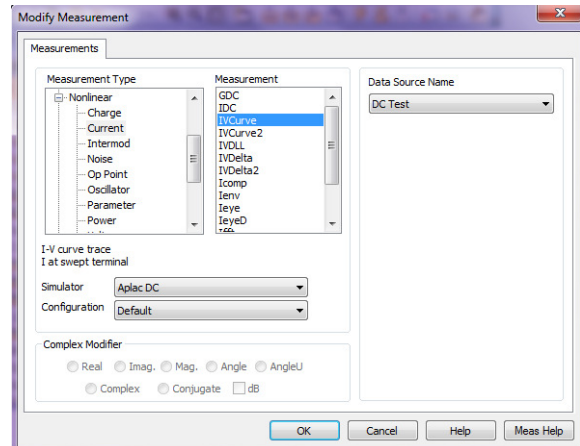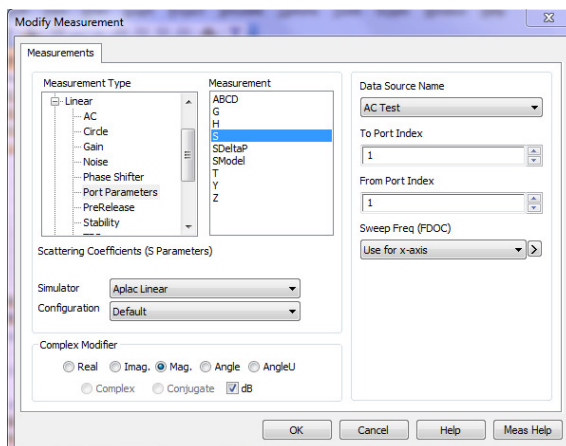
Model Library Release Notes

The AMP Product Model Library version V16p00 supports the follow product releases:
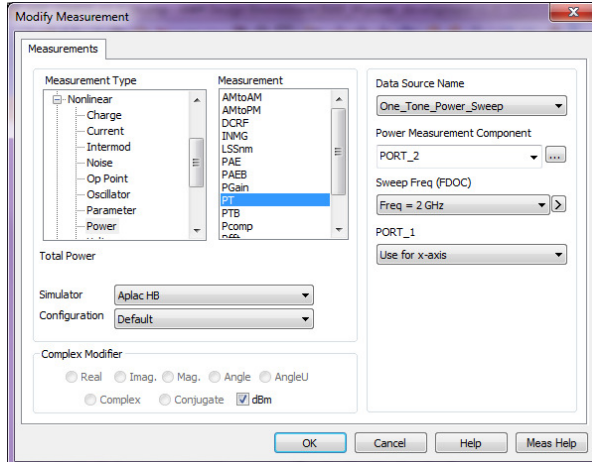
Cadence® AWR® Microwave Office® **Version 16 (64-bit simulations)** and later.

All models are used with the APLAC simulators only.

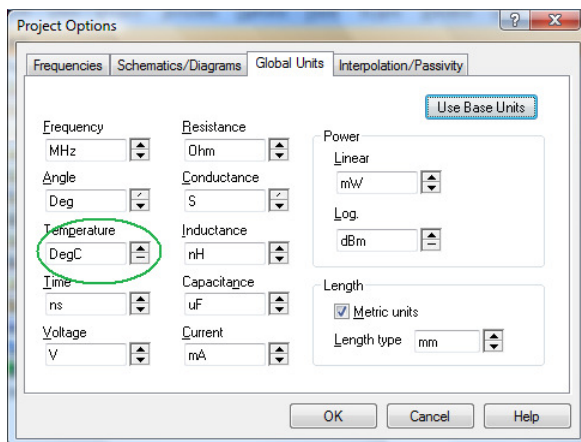i.   Use APLAC Simulators for all simulations.

Use APLAC Simulators for all simulations (cont.)

ii. This library uses the global variable _TEMP as Simulation Temperature.
   Ensure to use Project Options => Global Units   Temperature: DegC
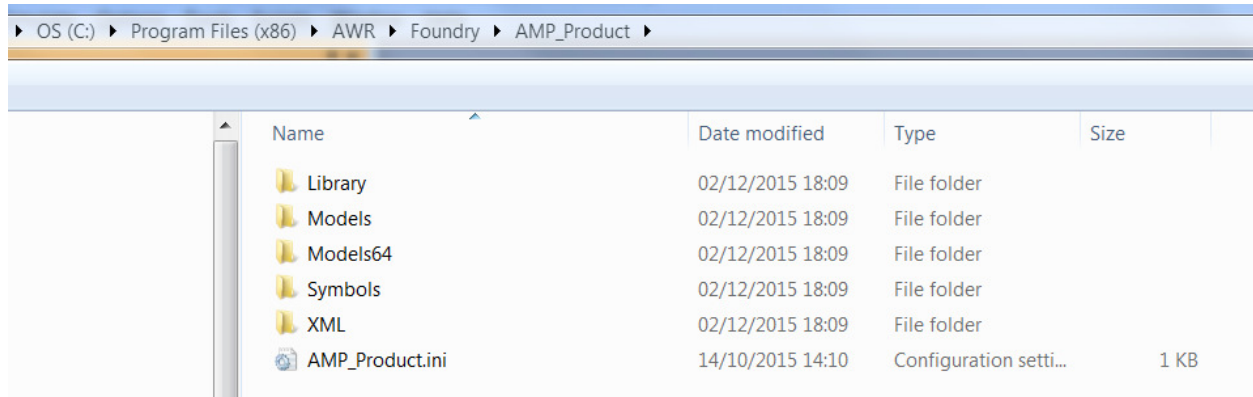   This global temperature may be assigned a value in the Global Definitions window.

   Use the instance parameter "DTA" to change the specific device temperature relative to
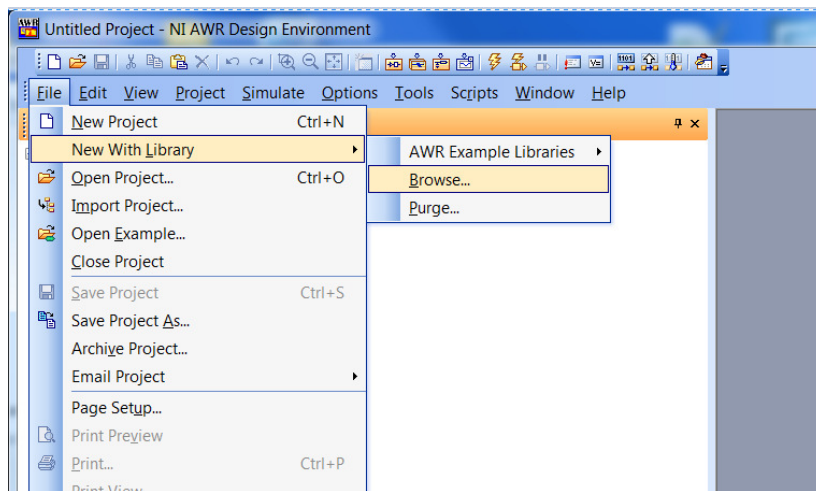   _TEMP.

How to install the AMP Product Model Library and add it to your design project

Quick Start Guide:

    i.   Unzip the file "AMP_Product_Lib_Vxxpx.zip" on your computer and place in your chosen directory.

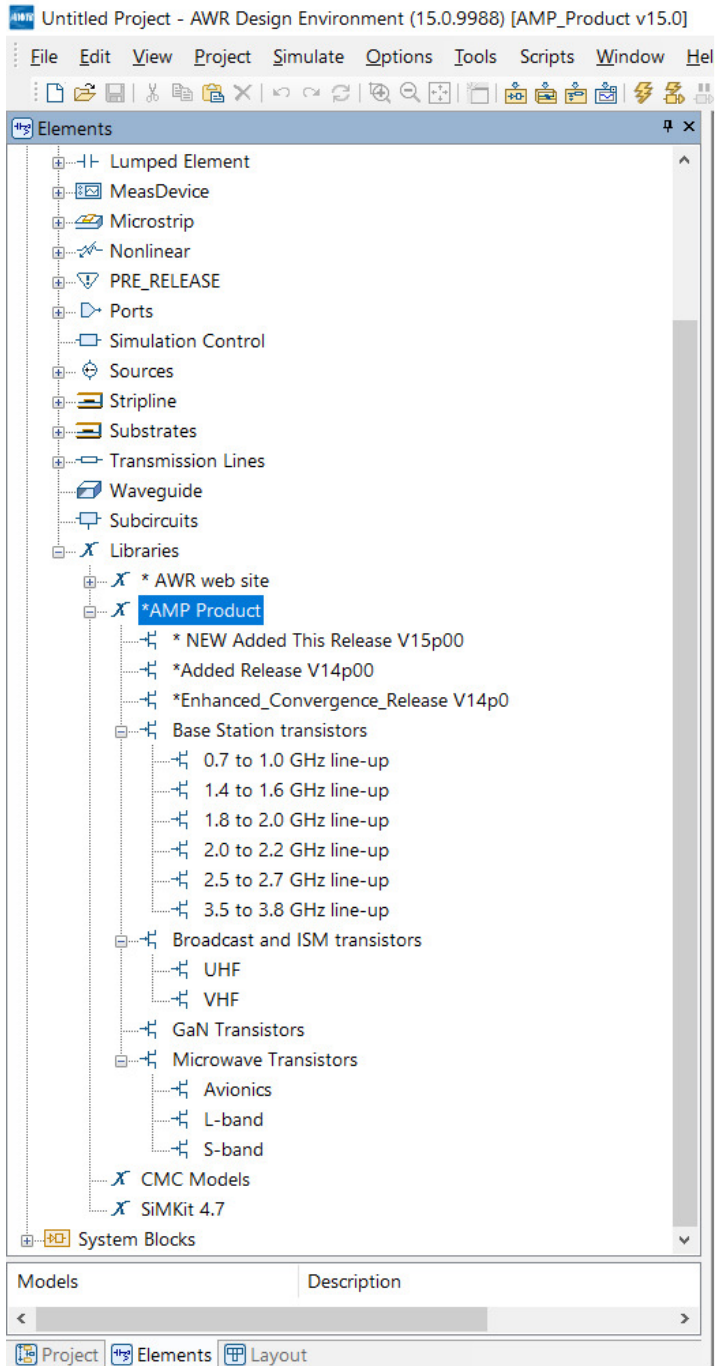   ii.   Start the MWO Application and select "New With Library"

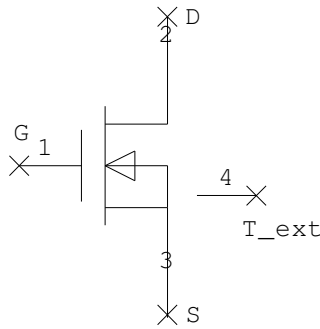Browse to your chosen directory.

Select the file : **AMP_RFpower.ini**

How to insert AMP LDMOS and GaN Models into your design

i.   Browse to the element browser "Elements" => "Libraries". Click on the "+" sign to expand the folder "Libraries" and you should see the folder "AMP Product". Expand the folder to see either all of the parts in the complete library.

ii.   Select the transistor type you want to add to your circuit and drag and drop it to your schematic.

How to correctly use AMP LDMOS and GaN Models with a Thermal Node.

```
SUBCKT
ID=S1
NET="AMP_BLF7G22_130"
DTA=0
Zth_Enable=1
```

The "T_ext" node is the thermal node of the device and must be connected to the ground either directly or though a RC-parallel network which may be used to describe an additional or alternative external thermal networks.

The "Zth_Enable" parameter allows enabling or disabling the default thermal network of the device. This parameter can be used in combination with an external thermal network to reproduce the following situations:

1. Zth_Enable set to 0, T_ext node connected to ground directly: Isothermal simulations.

2. Zth_Enable set to 0, T_ext node connected to ground thought a RC-parallel network: ET simulations with the external RC-parallel as thermal network.

3. Zth_Enable set to 1, T_ext node connected to ground directly: ET simulations with the default device thermal network.

2. These components might not be suitable to support time-domain simulations such as transient simulations or transient-assisted HB simulations.

3. Failing to connect the "T_ext" node to the ground either directly or though a RC-parallel network will cause the non-convergence of simulations.

4. Zth_Enable set to 1, T_ext node connected to ground thought a RC-parallel network: ET simulations with the series of the external RC-parallel and the device default as thermal network.