

How Do I Change Length Units In the AWRDE and Check For Any Resulting Errors in Layout

Problem

What should I do if I started designing my schematics using inconvenient length units and I want to change them now?

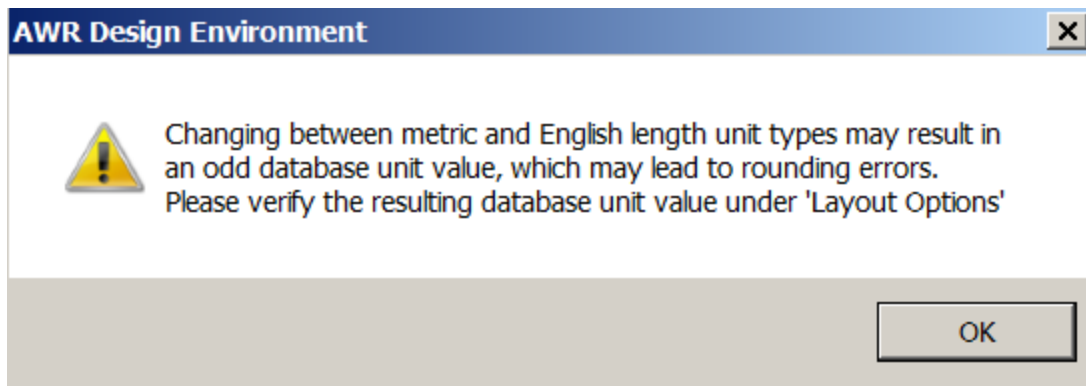
Solution

Please review **New Design Considerations** in the online help (**AWRDE User Guide > AppendixB**). Among the important pre-design considerations listed, is the setting of units.

Length Parameters Set to Numerical Values

If your schematics do not include equations and variables to specify physical dimensions, follow this procedure to change your project's length units and ensure the change does not cause any problems:

- Go to **Options > Project Options...** and change the **Length** type to your desired units.
- Click **OK** to dismiss the warning box shown below.

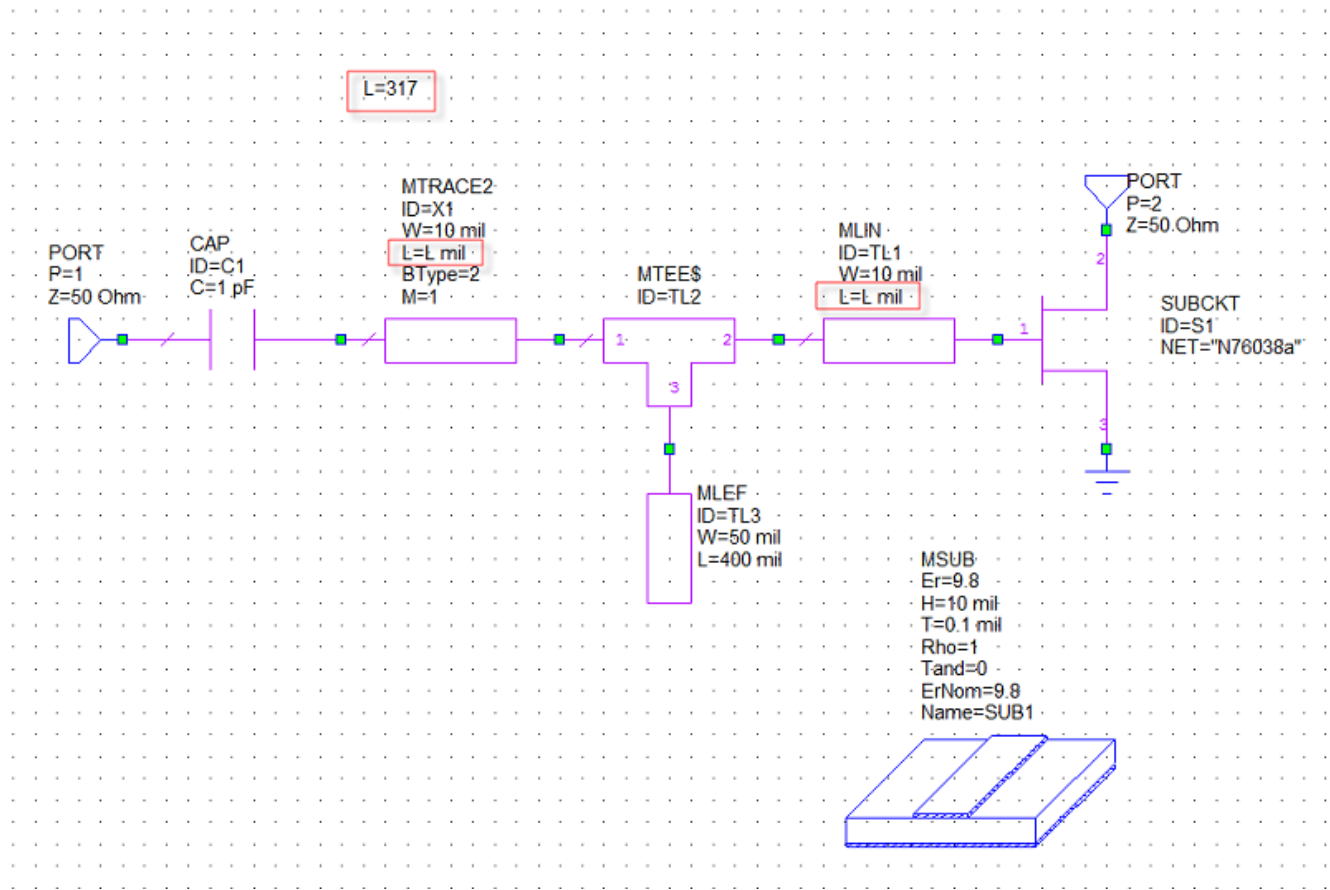


- Go to **Options > Layout Options...** and if necessary round off the **Grid Spacing** and the **Database Unit Size** to desired values.
- In your schematics, check all element parameters with length units (e.g. W and L on microstrip lines), and make sure they are rounded correctly. The full precision parameter values are only visible when they are being edited. So in schematics, you must double-click on parameters, or on the elements to see the parameters' exact (not rounded) values.
- Open each schematic's layout view and if there are missing components, go to **Layout > Regenerate Layout** to re-generate your layout. Re-generating your layout is likely to re-arrange the cells. Make sure the cells in the layout are still connected properly. Use the **Edit > Snap Together** command to re-attach any components that were disconnected as a result of the changes so far.

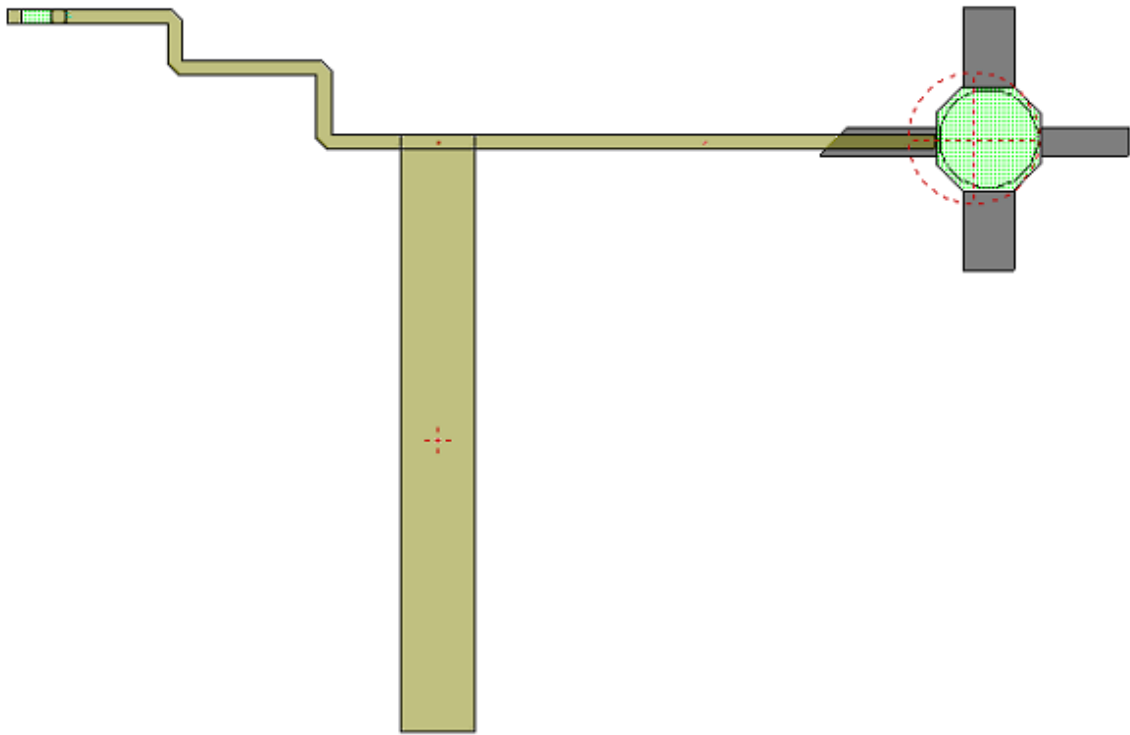
Length Parameters Set to Variables

Generally, equations are unaffected by project units. This will cause elements whose dimensions are set by variables or equations to expand or contract in unexpected ways.

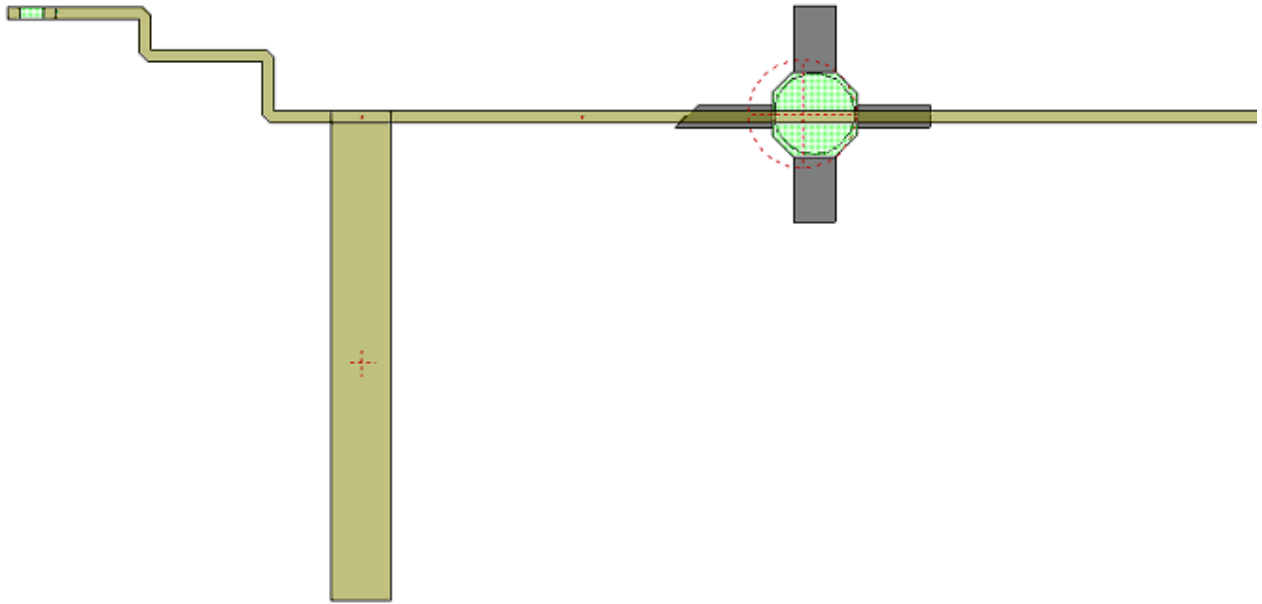
The following figure shows a schematic in which the length of some of the elements is set by the variable "L", whose value is assigned in an equation. As you can see the length units are mils.



The layout of the above schematic before the length units are changed is shown in the following figure.



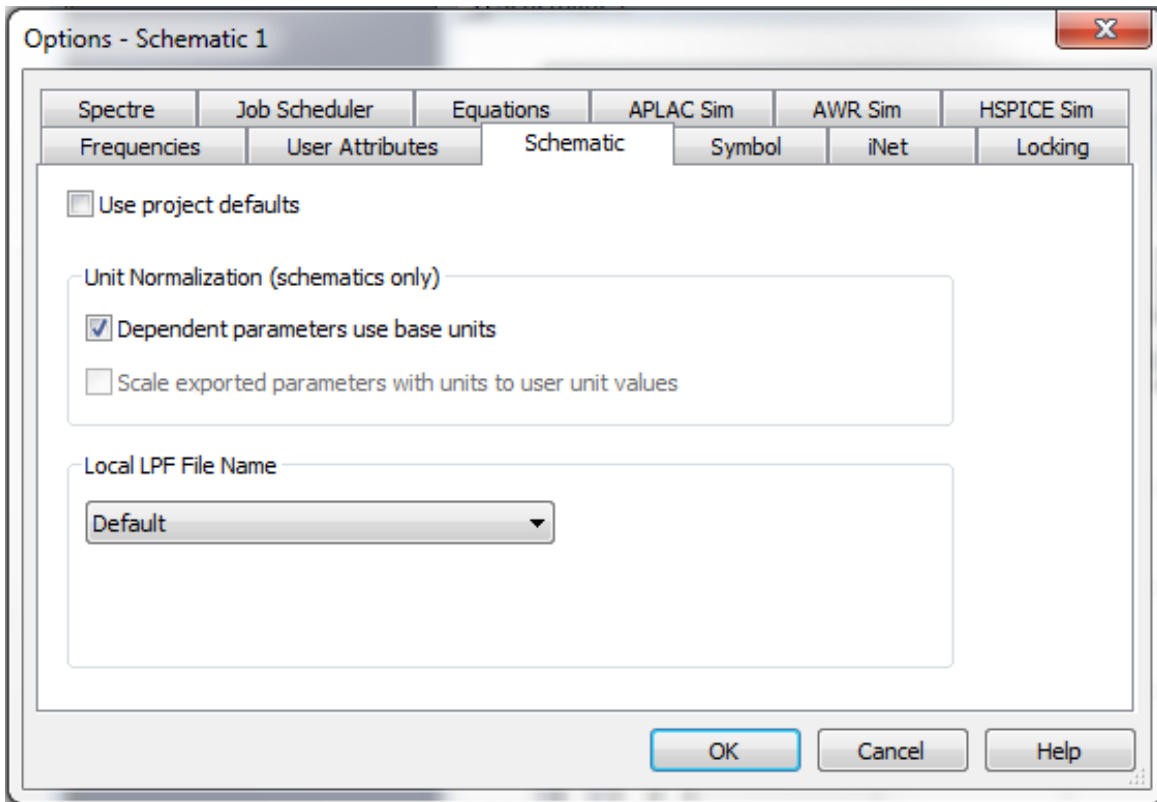
The layout of the above schematic after changing units from mil to mm is shown in the following figure.



As shown above, the size of the elements that use variable "L" changes when length units change. Convert your equations' numeric values to counter the unit change.

Note: Changing length units will not affect the elements, if Dependent parameters use base units is selected in the schematic options.

To access Dependent parameters use base units checkbox, right click on your schematic file in **Project** pane and go to **Options > Schematic** tab.



With the Dependent parameters use base units selected, length units for parameters defined by variables or equations will be in meters. Make sure you calculate your equations accordingly.

