



Implementing Coilcraft S-Parameter Component Models in FilterSolutions® from Nuhertz

A FilterSolutions Example Using S-parameters for Coilcraft® Inductors

Coilcraft's S-parameters for Inductor products are provided in a single compressed "zipped" file. The file must be "unzipped" after downloading to obtain the separate Inductor value S-parameter files.

The user then places all the inductor S-Parameter files that are candidates for the filter design in any chosen directory.

After Designing an LC filter using the Nuhertz Filter Wizard, left clicking opens the Inductor Selection, "*Inds Select*" selection box, allowing the user to "Browse", as shown in Figure 1:

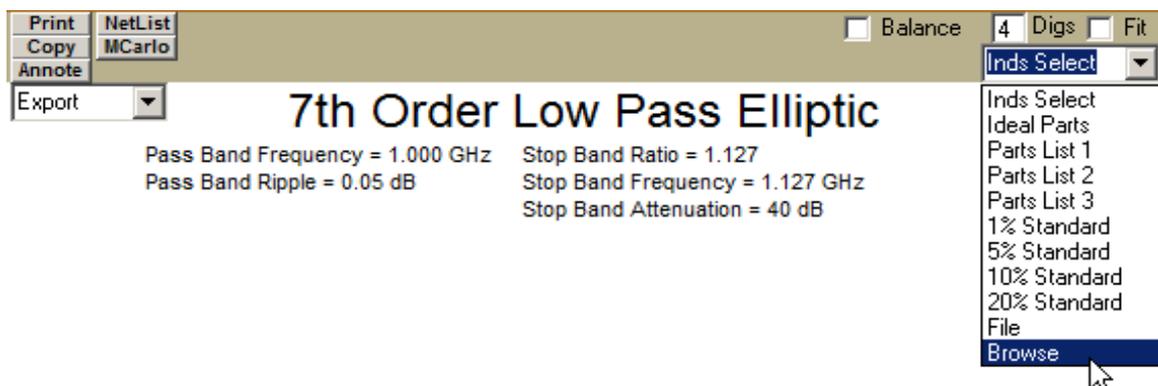


Figure 1: Select S-Parameter Folder

Browsing to the folder containing the unzipped candidate files for design allows the selection any S-parameter file See figure 2.

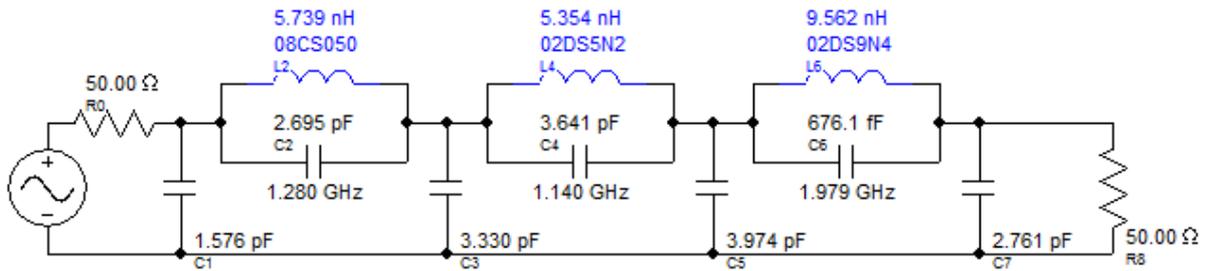


Figure 2: Nuhertz Designed Filter using Coilcraft Inductors

Each new filter design iteration will automatically incorporate the most appropriate Coilcraft candidate S-Parameter file, as shown in Figure 3.

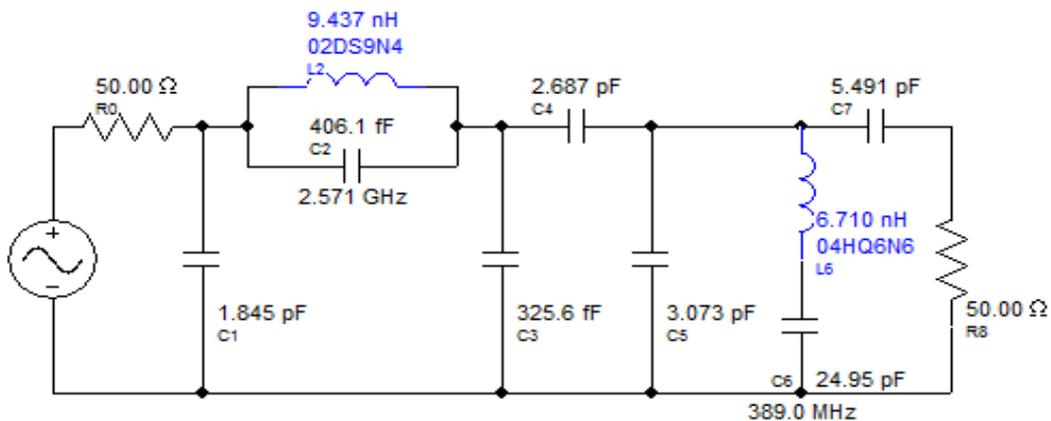


Figure 3: Nuhertz Designed Filter using Coilcraft Inductors

Specific S-Parameter files may then be selected for individual inductors. By left-clicking the desired inductor, the corresponding File will appear in the pop-up window.

The designer then selects, “Load Touchstone File” for the user-chosen Coilcraft S-Parameter, as shown in Figure 4

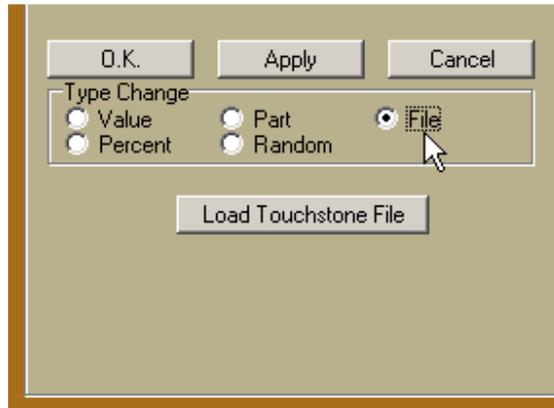


Figure 4: Selection of Specific Coilcraft S-Parameter File

S-Parameter files for specific user-selected inductors may be manually selected from a separate family or directory by left clicking, first, the desired inductor, and then “Part” and “File” in the pop-up window.

Browsing to the specific inductor family desired, from within the directory containing Coilcraft S-Parameters, allows the user to select any file.

The most appropriate Coilcraft S-Parameter file for that inductor will be automatically selected. (See Figure 5).

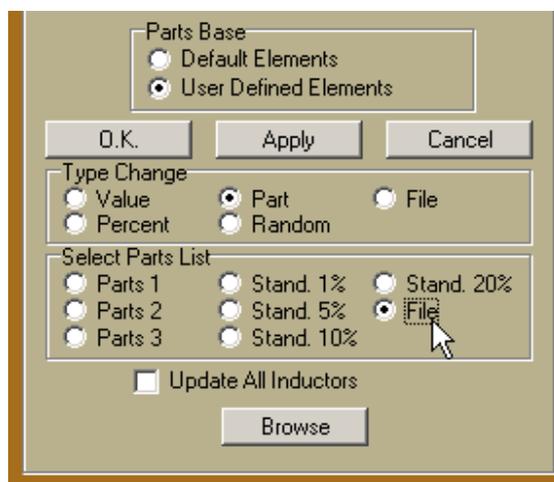


Figure 5: Selection of S-Parameter Family for Specific Inductors



Exporting Into Other Software

For export of the synthesized filter circuit into other simulation software, left clicking the “Export” selection box, (in the upper left of the schematic), allows the selection of, “AWR” or “CST S2”, as “setup” or “direct” (“Setup” is selected to setup export definitions; “Direct” to export directly with previously defined export definitions).

AWR® exports use Data File nodes to define Coilcraft S-Parameter files

CST Studio Suite® exports use Touchstone blocks to define Coilcraft S-Parameter files

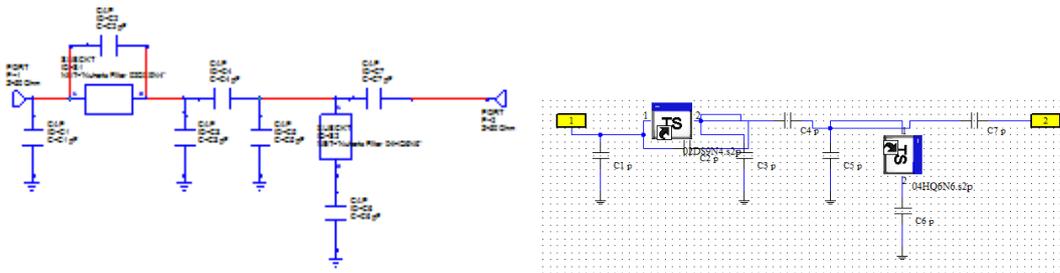


Figure 6: Nuhertz synthesized filter designs exported to AWR and CSTStudio Suite, with Coilcraft S-Parameter Files