Combine S-Parameters

To run this script

Select **Scripts > Data > Combine_S_Params** from the Menus.

Or, in versions that support the script, you can run the utility directly from this page using this button.

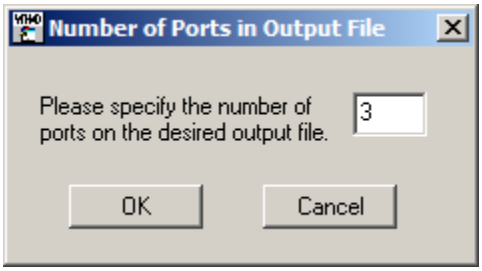
Run Utility

Description

Often, s-parameter measurements for larger networks are made by taking two port measurements and then combining the results into a larger network parameter file. This script will combine these smaller port parameter files into a larger port parameter file with the port mapping the user specifies.

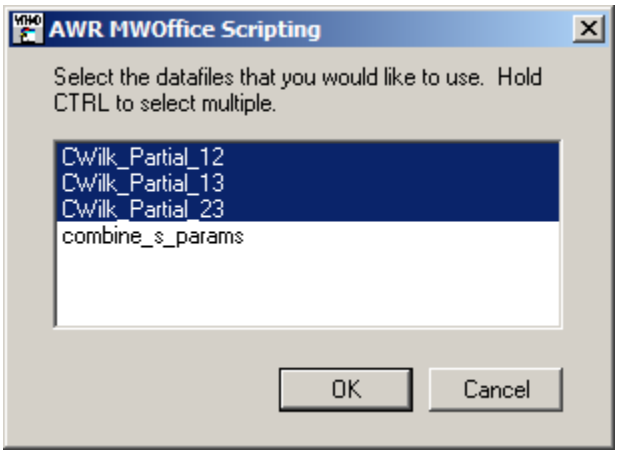
Specify the Number of Ports

The user needs to specify the number of ports in the full network. This number needs to be greater than two.



Select Data Files

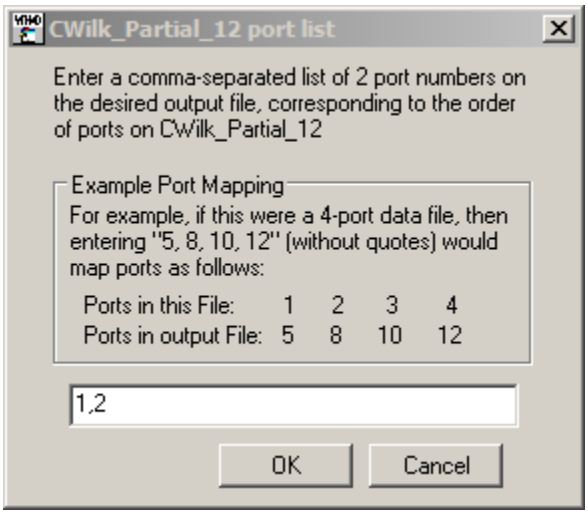
Then the user needs to specify which data files in the project comprise the full network. Hold down CTRL to select multiple data files.



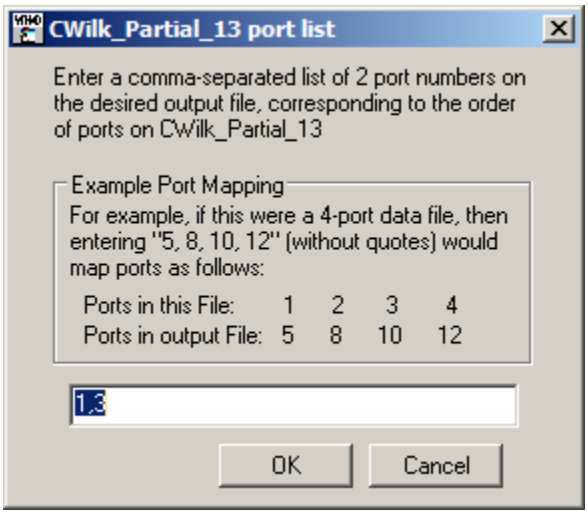
Specify Port Mapping

Next, the user specifies the port mapping for each datafile selected using a comma separated list. Each of the data files selected in this example were two ports so we need to specify the mapping for both of the ports.

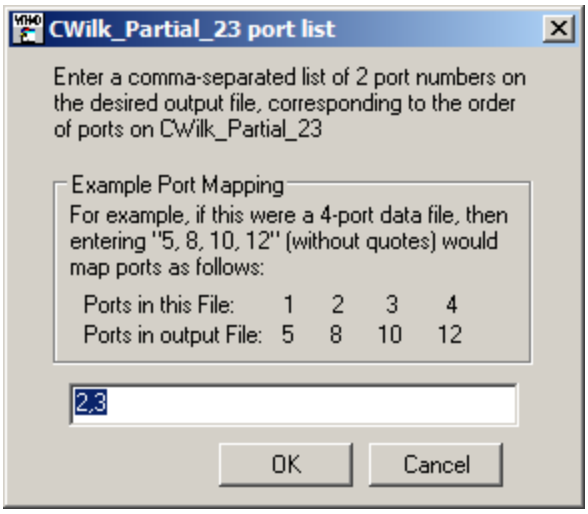
The first datafile is "CWilk_Partial_12", which represents the measurement configuration when port1 of the VNA was connected to port 1 of the Wilkinson and port 2 of the VNA was connected to port 2 of the Wilkinson. So we enter "1,2" to represent this mapping.



The second datafile is "CWilk_Partial_13, which represents the measurement configuration when port 1 of the VNA was connected to port 1 of the Wilkinson and port 2 of the VNA was connected to port 3 of the Wilkinson. So we enter "1,3" to represent this mapping.

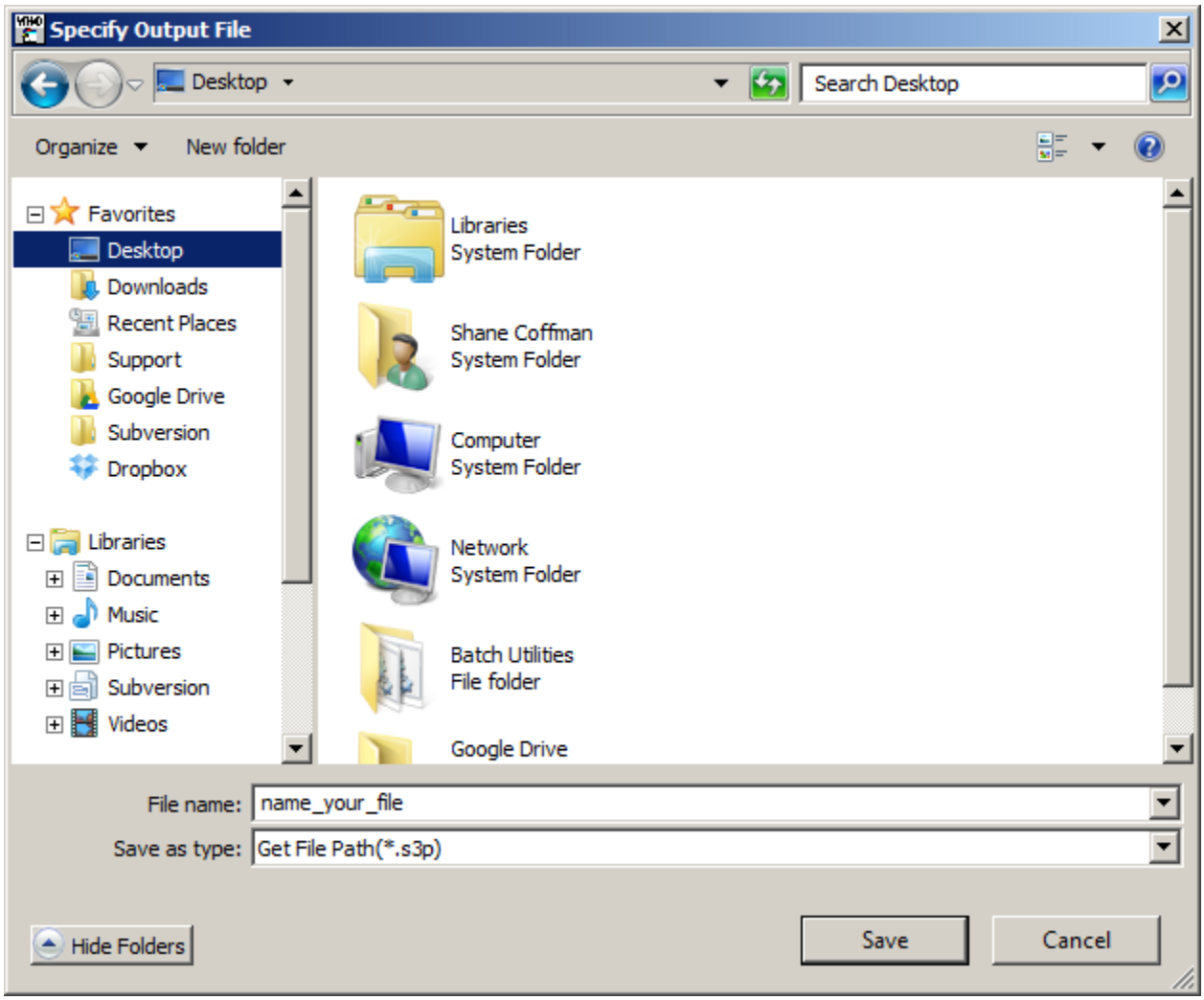


The third datafile is "CWilk_Partial_23, which represents the measurement configuration when port 1 of the VNA was connected to port 2 of the Wilkinson and port 2 of the VNA was connected to port 3 of the Wilkinson. So we enter "2,3" to represent this mapping.



Specify Output File

Browse to where you want to output file to be, name the file, and then click save. The file will also be imported into the project you ran the script in.



Other Considerations

The flexibility of this script allows users to combine arbitrarily sized port parameter files into larger arbitrarily sized port parameter files. It also allows users to not specify port mappings for particular port parameters. In this case, the value of these port parameter files is set to zero meaning that there is no interaction between the two ports. When this occurs, a dialog like the one below will indicate to the user which port parameters in the output matrix are filled and which are not filled. If the location in the matrix is filled with an "X" then values for that port parameter exist in the output file. If the location is filled with a "0" then that port parameters value is zero.