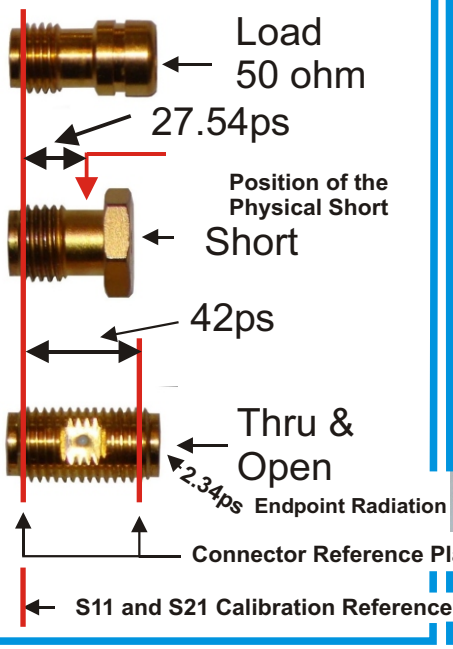
Rosenberger CAL Standards for the DG8SAQ VNWA

by Kurt Poulsen OZ7OU *Revision 2 May 2013*

Female Calibration Kit



The delay of the Female-Female adapter is pending what you have and its lenght.

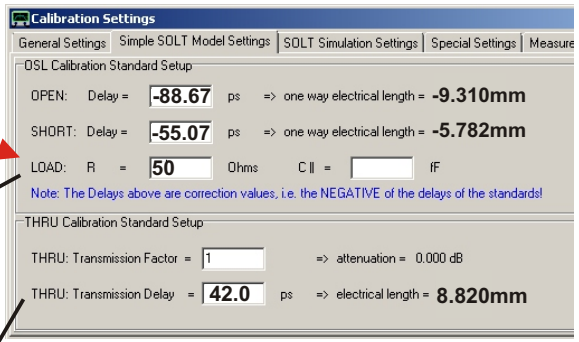
On this sheet you will find the settings required in "Calibration Settings" and "Simple SOLT" for the Reflection (S11/S22) and Transmission (S21/S12) calibrations.

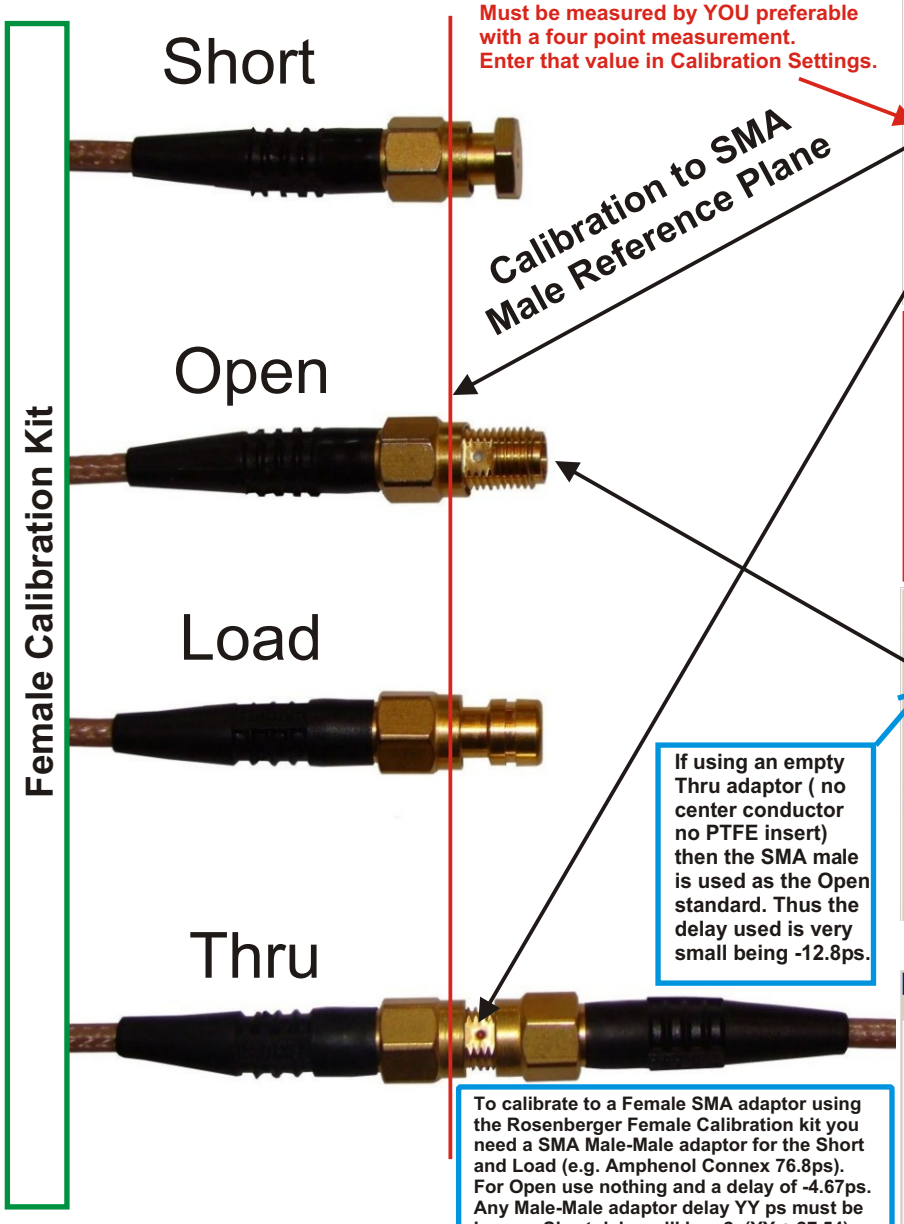
- Please note that if you want to calibrate to the Reference plane of the VNWA Female TX SMA connector on the cabinet, then you must use a male Calibration Kit. Else look at the "How to..." below.

- When using testcables and measuring both S11 and S21, then the Thru adaptor is used, during S21 calibration, but removed during real measurements. To compensate for the changed transmission delay between the TX and RX port, you have to enter the delay for the Thru adaptor in the calibration settings. When doing so the reference planes for both reflection and transmission remain "in sync" at the chosen testcable's calibration plane.
- When the test cables have Male SMA at the testing end, the Female Calibration Kit data is used, and likewise for Female SMA the Male Calibration kit data is used.
- Do not use the Crosstalk Calibration for general use.
- Always set Delay Thru to 0 ps else transmission and reflection is not "in sync" any longer.

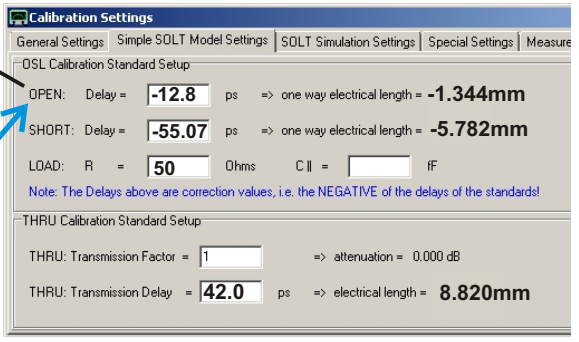
The Rosenberger Female-Female adaptor has a delay of 42ps. If your Thru adaptor has a longer outside physical lenght which differ from 12.7mm by X mm then your delay is 42ps plus X times 4.83ps

The DC Resistance value of the Load Must be measured by YOU preferable with a four point measurement. Enter that value in Calibration Settings.





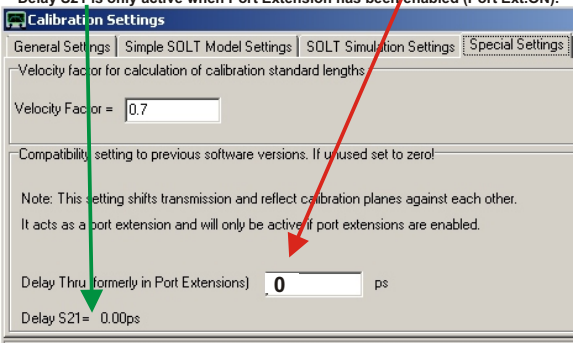
A few Hints:
The calibration Plane can be moved forward and backward by using Measure/Port Extensions.
Port 1 used for the forward direction (S11 and S21), and Port 2 used for the reverse direction (S22/S12).
During reverse direction the DUT is reversed.
For a positive delay the Calibration Plane is moved away from the TX port and Vice Versa.
If the TX level is changed the calibration is also changed slightly. ***READ ALSO THE HELP FILE***



If using an empty Thru adaptor (no center conductor no PTFE insert) then the SMA male is used as the Open standard. Thus the delay used is very small being -12.8ps.

Please check Delay Thru is set to 0 ps

Delay S21 is only active when Port Extension has been enabled (Port Ext.ON).



To calibrate to a Female SMA adaptor using the Rosenberger Female Calibration kit you need a SMA Male-Male adaptor for the Short and Load (e.g. Amphenol Connex 76.8ps). For Open use nothing and a delay of -4.67ps. Any Male-Male adaptor delay YY ps must be known. Short delay will be - 2x(YY + 27.54)ps. For Load just use the combination Load and Male Male adaptor with the resistive value you have measured for YOUR Load.

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