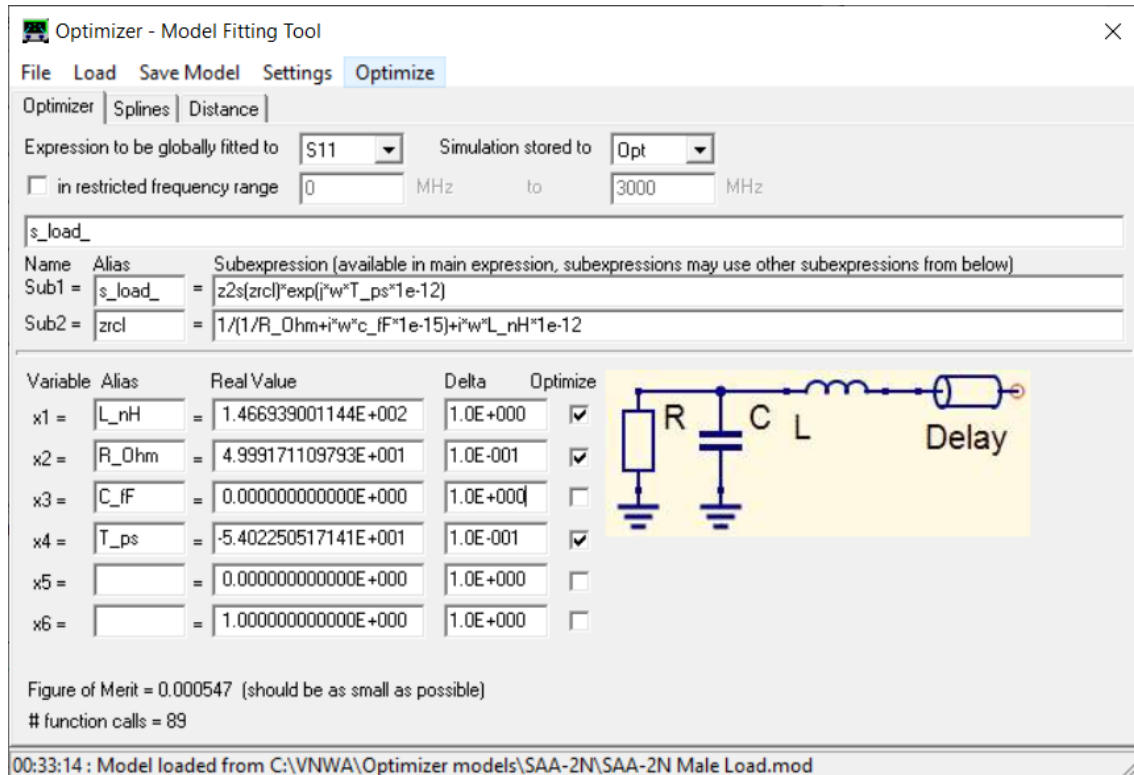


## SAA-2N calibration setting for NanoVNA-saver

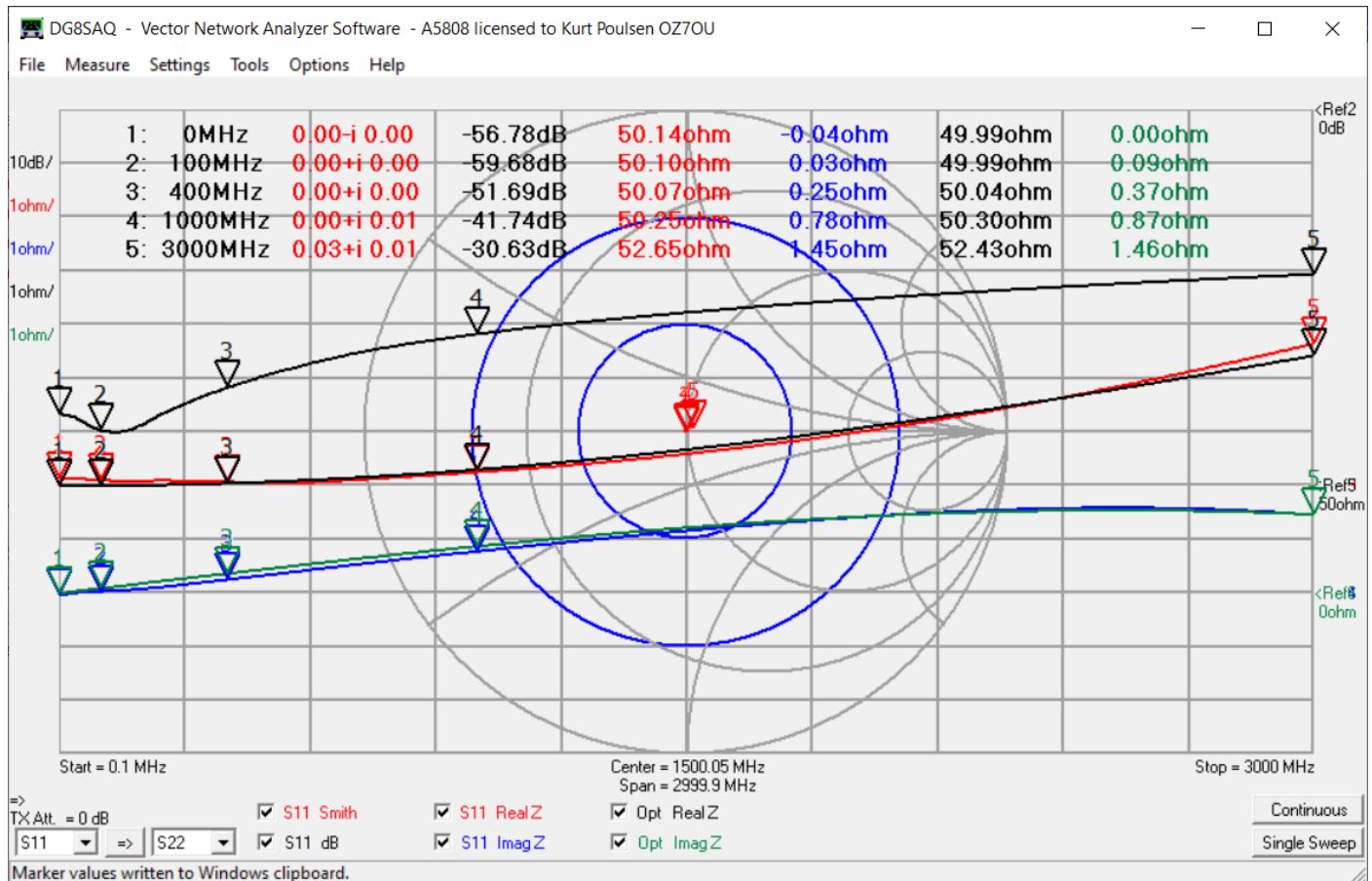
As platform is used the s1p and s2p files for the male and female files used for calibration of the VNA-QT software

Model for SAA-2N male load

Result:  $R=49.992\ \Omega$   $L=14669.39\text{e-}12\ \text{H}$  delay= -54.0225ps offset delay= +27.01125ps



Fitting result



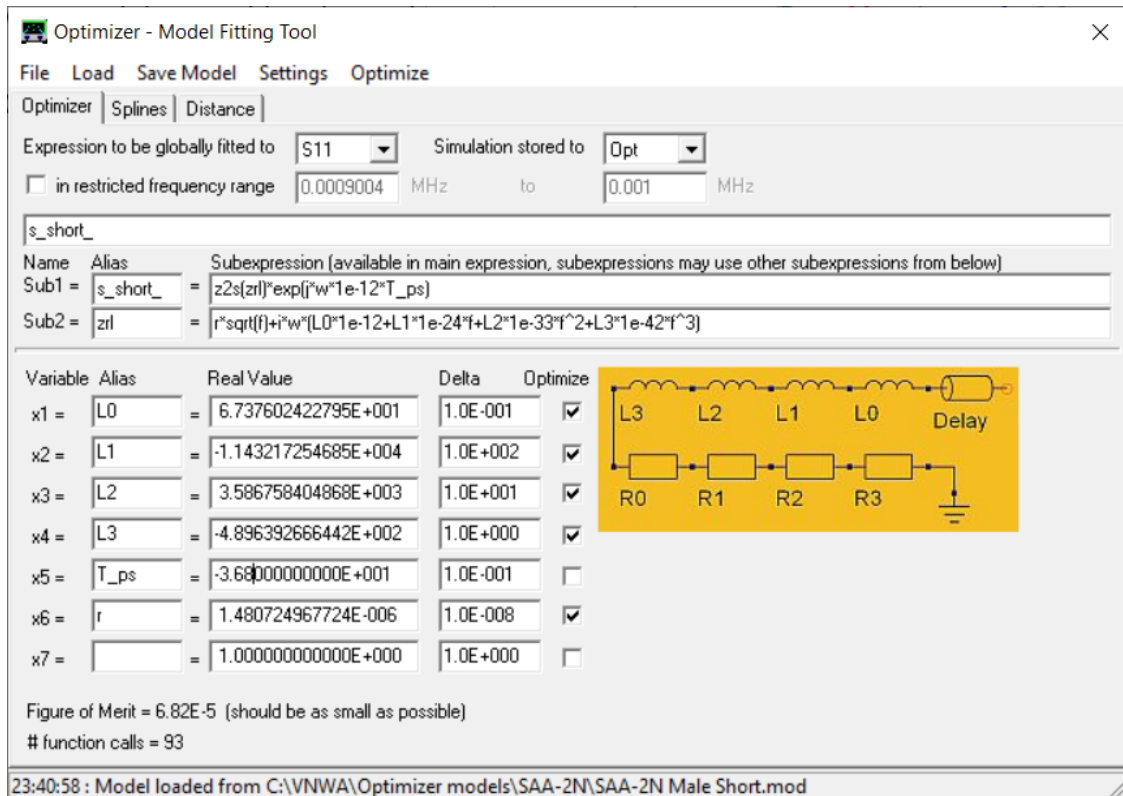
Model for SAA-2N male short.

The mechanical offset delay of the airline found first as  $5.52\text{mm}/0.3 = 18.4\text{ps}$

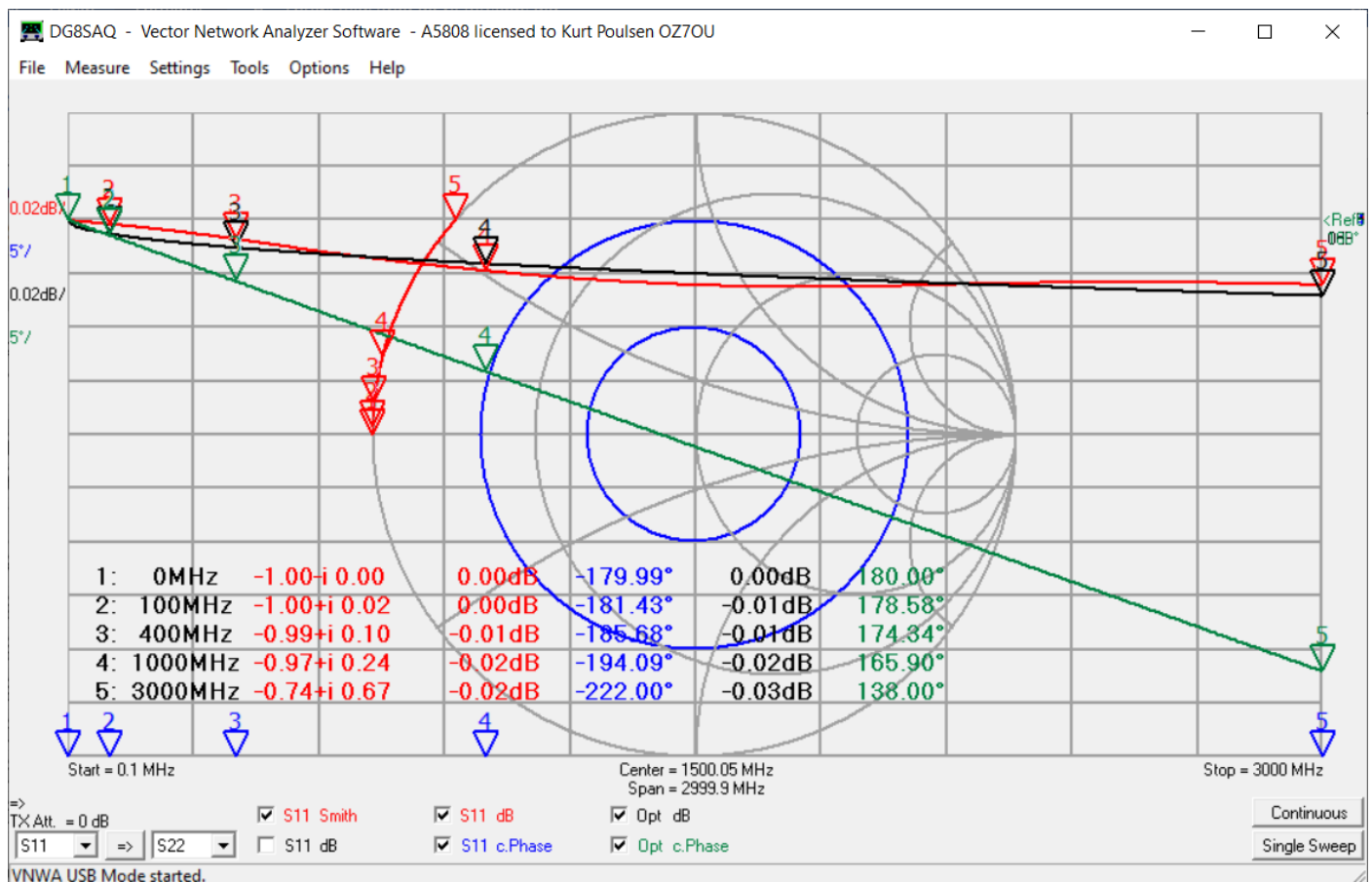
The static two way delay used for the optimizer 36.8ps

Result: delay= -36.8ps Offset delay= +18.4ps

$L0 = +67.376\text{e-}12(\text{H})$   $L1 = -11432.17\text{e-}24(\text{H})$   $L2 = +3586.76\text{e-}33(\text{H})$   $L3 = -48.964\text{e-}42(\text{H})$



Fitting result



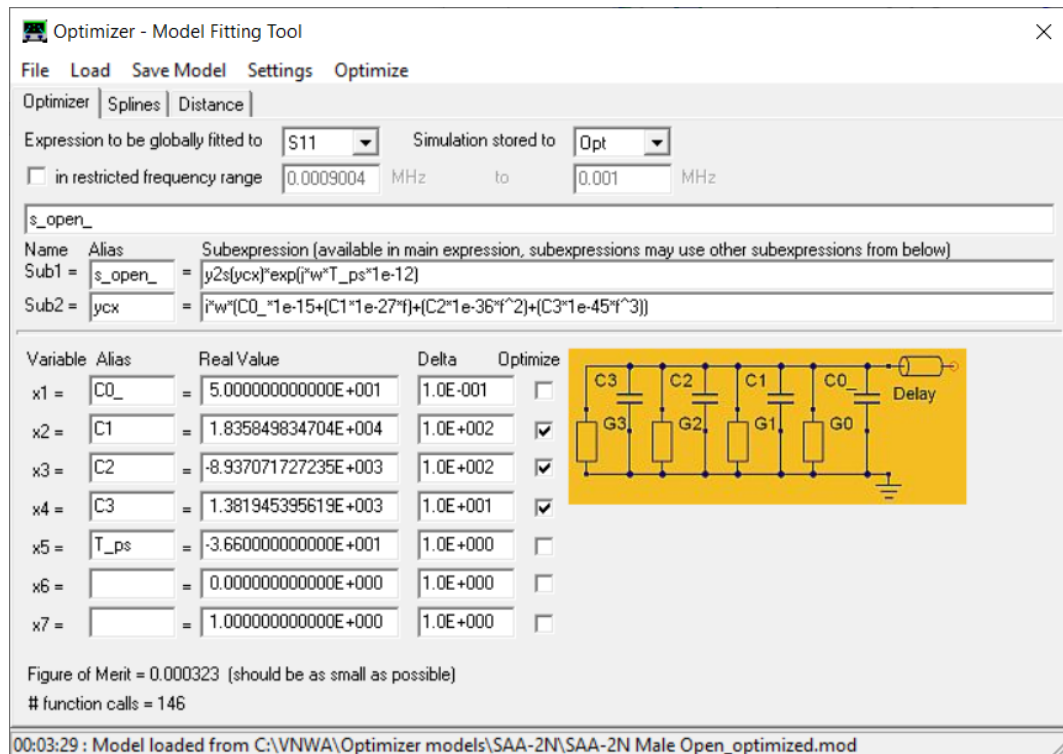
Model for SAA-2N male open

The mechanical static offset delay of the airline found first as  $5.49\text{mm}/0.3 = 18.3\text{ps}$

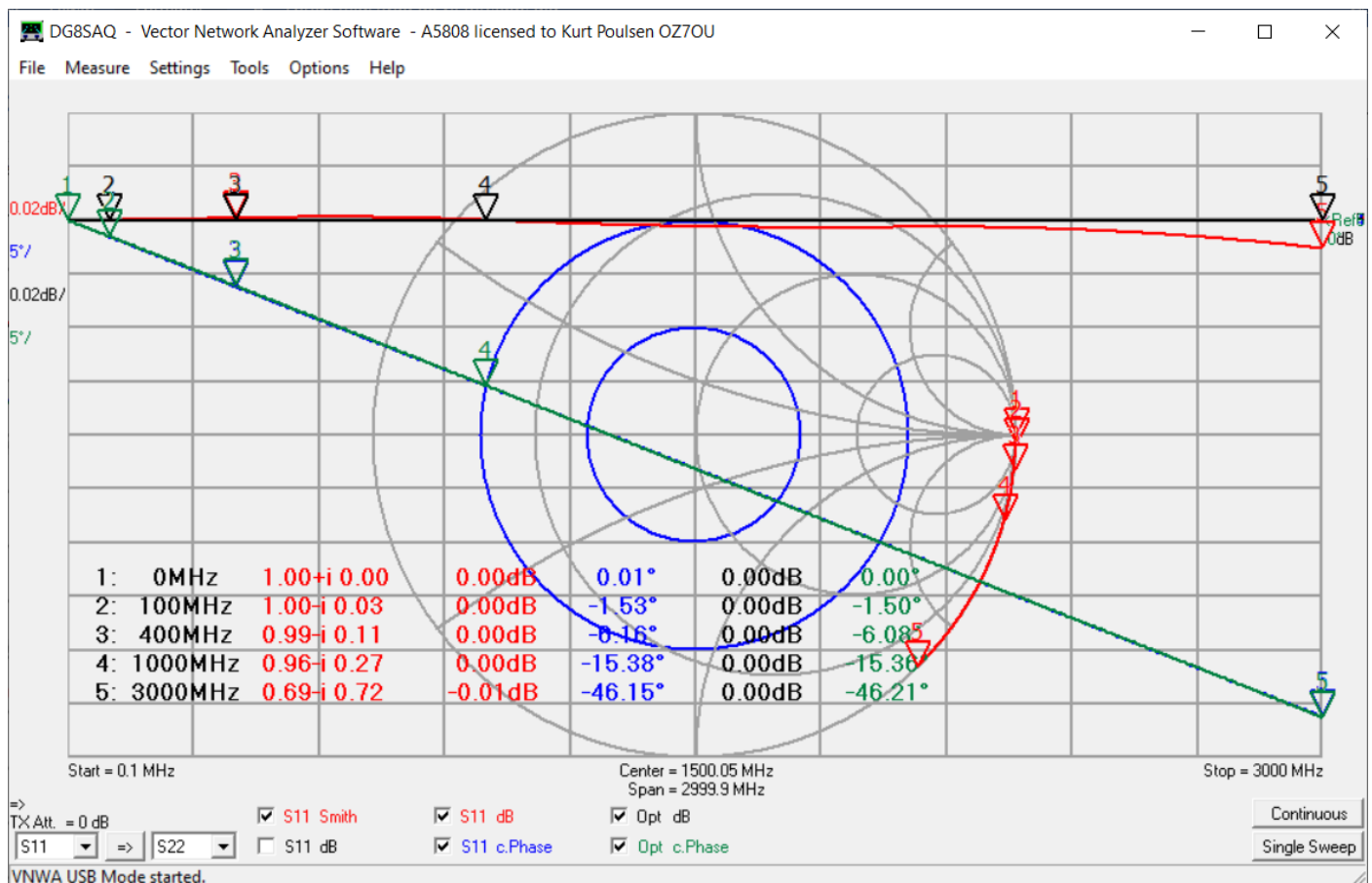
The static two way delay used for the optimizer 36.6ps.

The NanoVNA-saver requires the C0 to be 50fF (equal to a offset delay of 2.5ps)

Due to this special requirement the fitting is not optimum so an optimized model for the male open allow delay to be part of the Optimization se next page



Fitting result



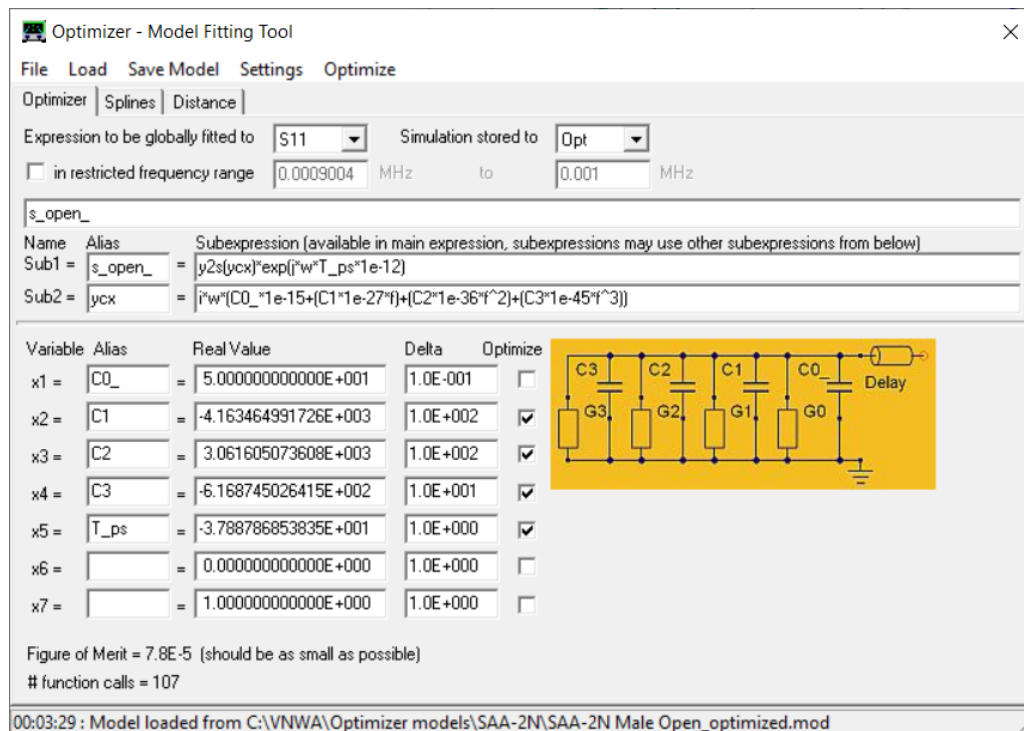
Optimized model for SAA-2N male open.

As NanoVNA-saver insist on a C0 value of 50fF the delay also found by Optimizer for better fitting

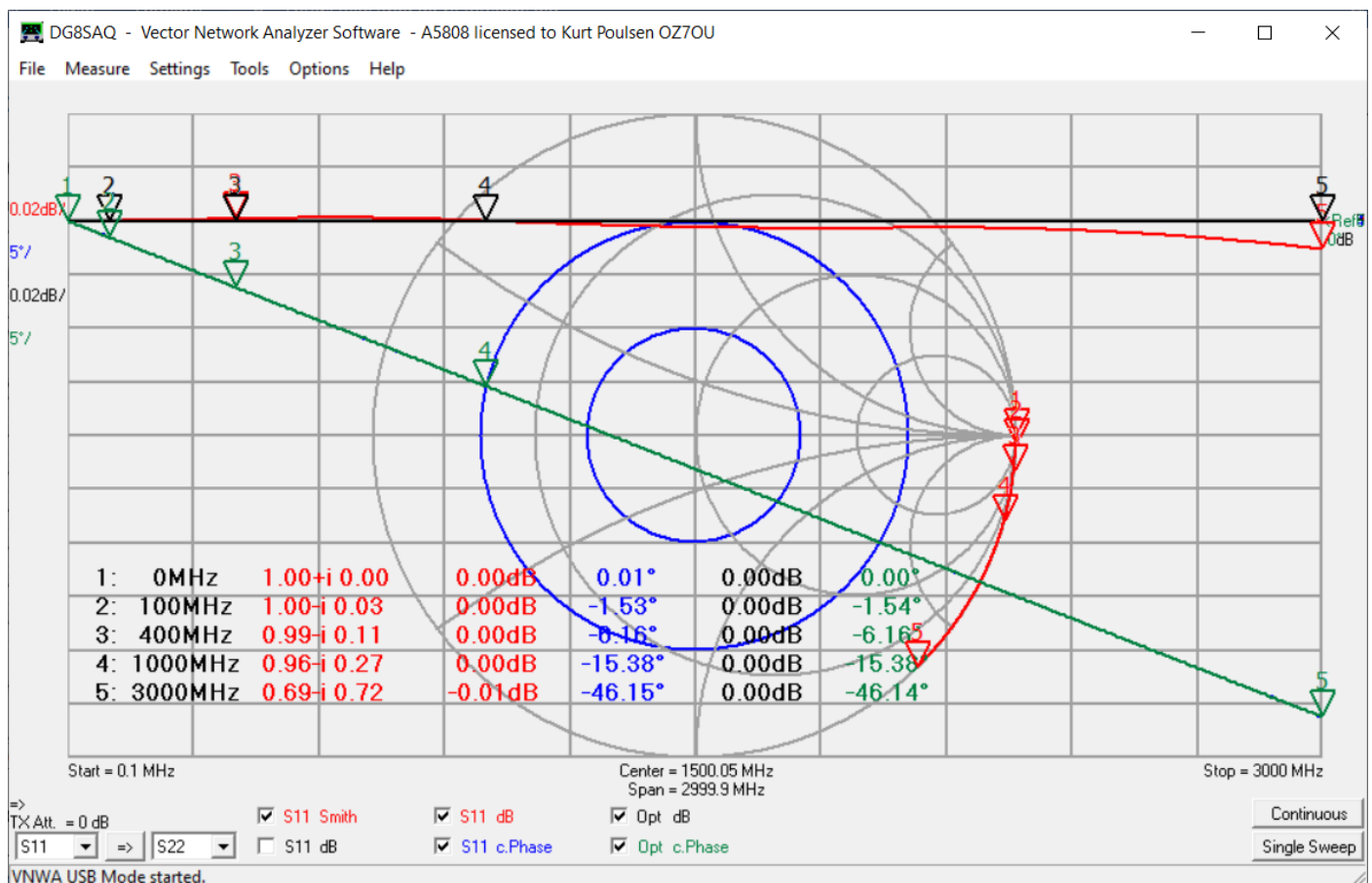
Result:

Delay= -37.8878ps Offset delay= +18.9439ps

C0= +50e-15(F) C1= -4163.46e-27(F) C2= +3061.61e-36(F) C3= -37.89e-45(F)



Fitting result Optimized model for SAA-2N male open

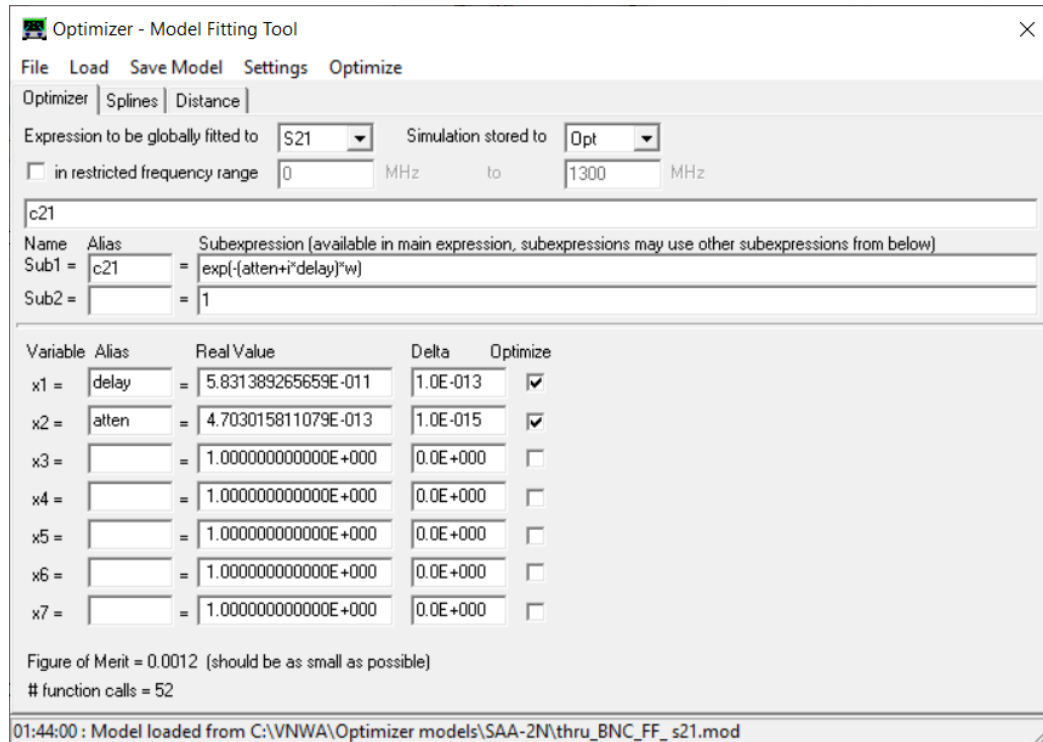


## Female kit determination

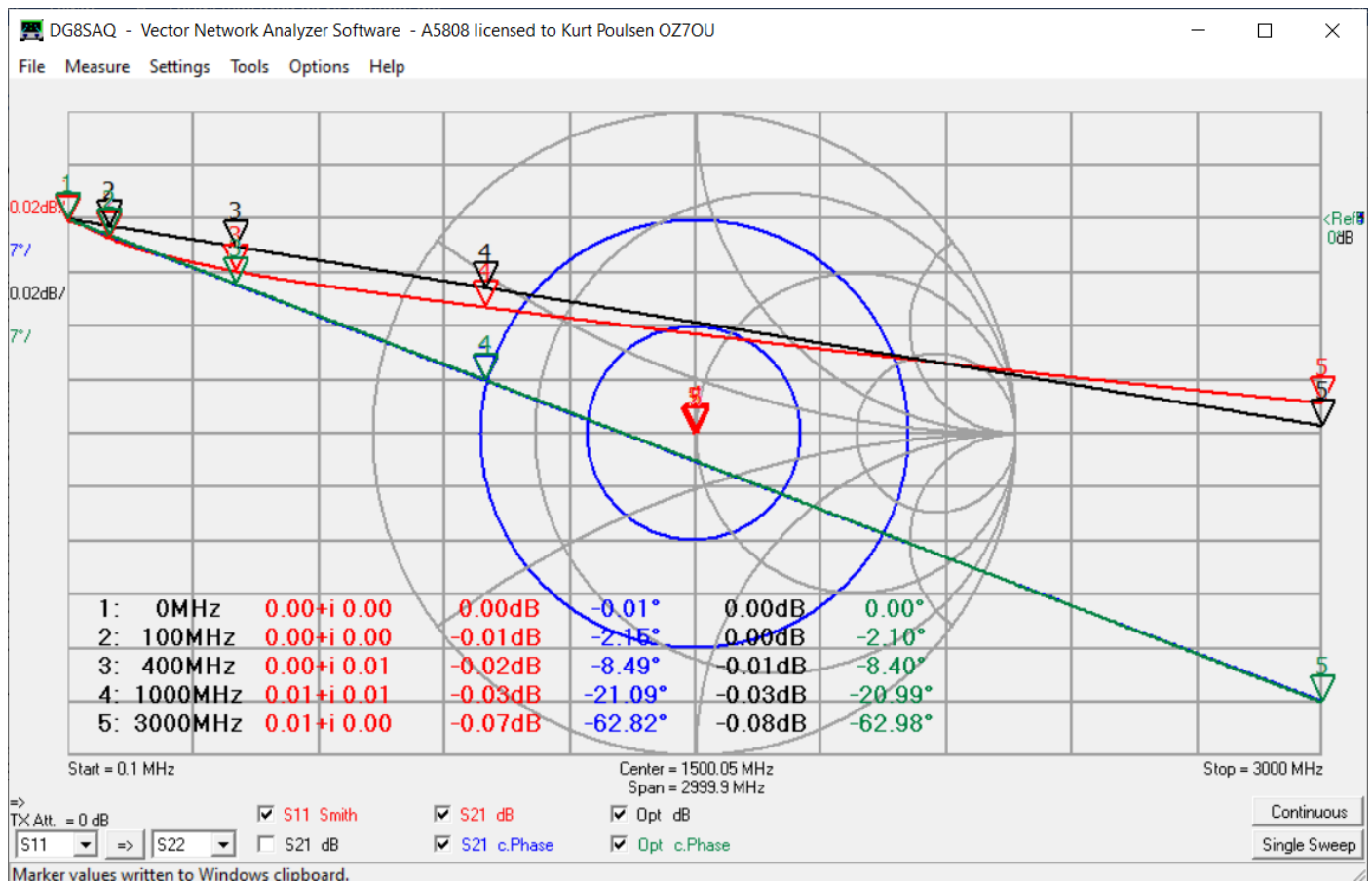
At first the female female thru delay are being determined (NanoVNA-saver call it an Offset delay it is a delay)

Model for SAA-2N female female thru

Result: thru delay= 58.314ps



Fitting result



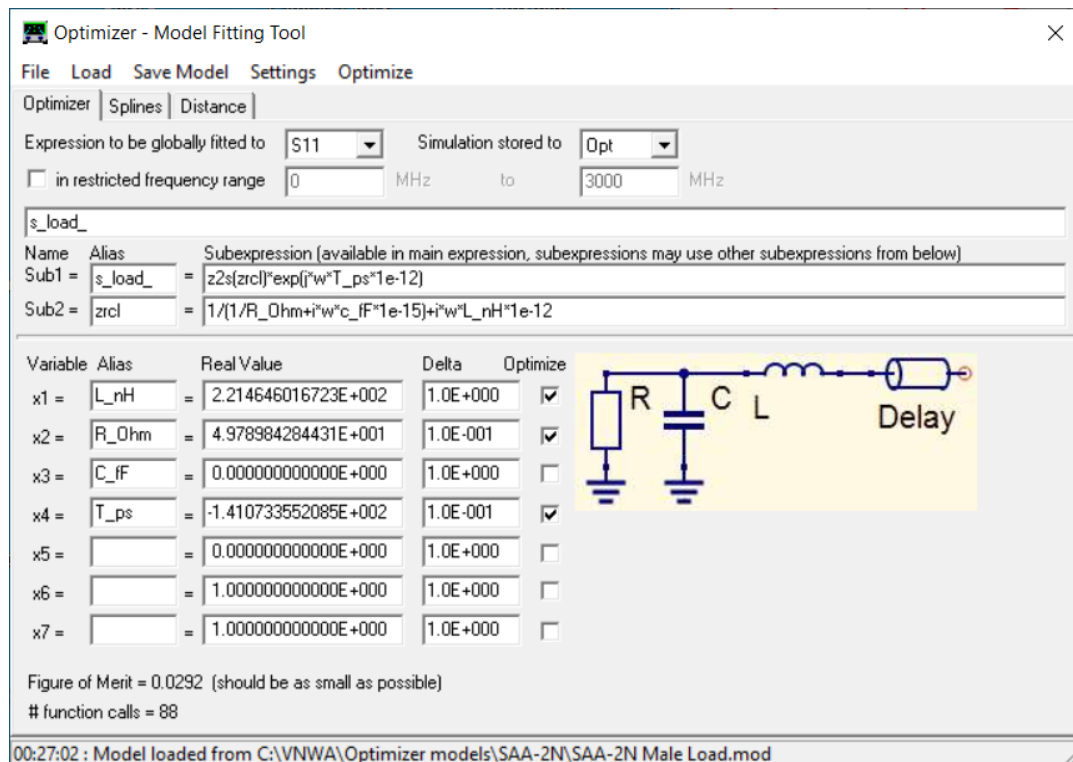


Model for SAA-2N female load:

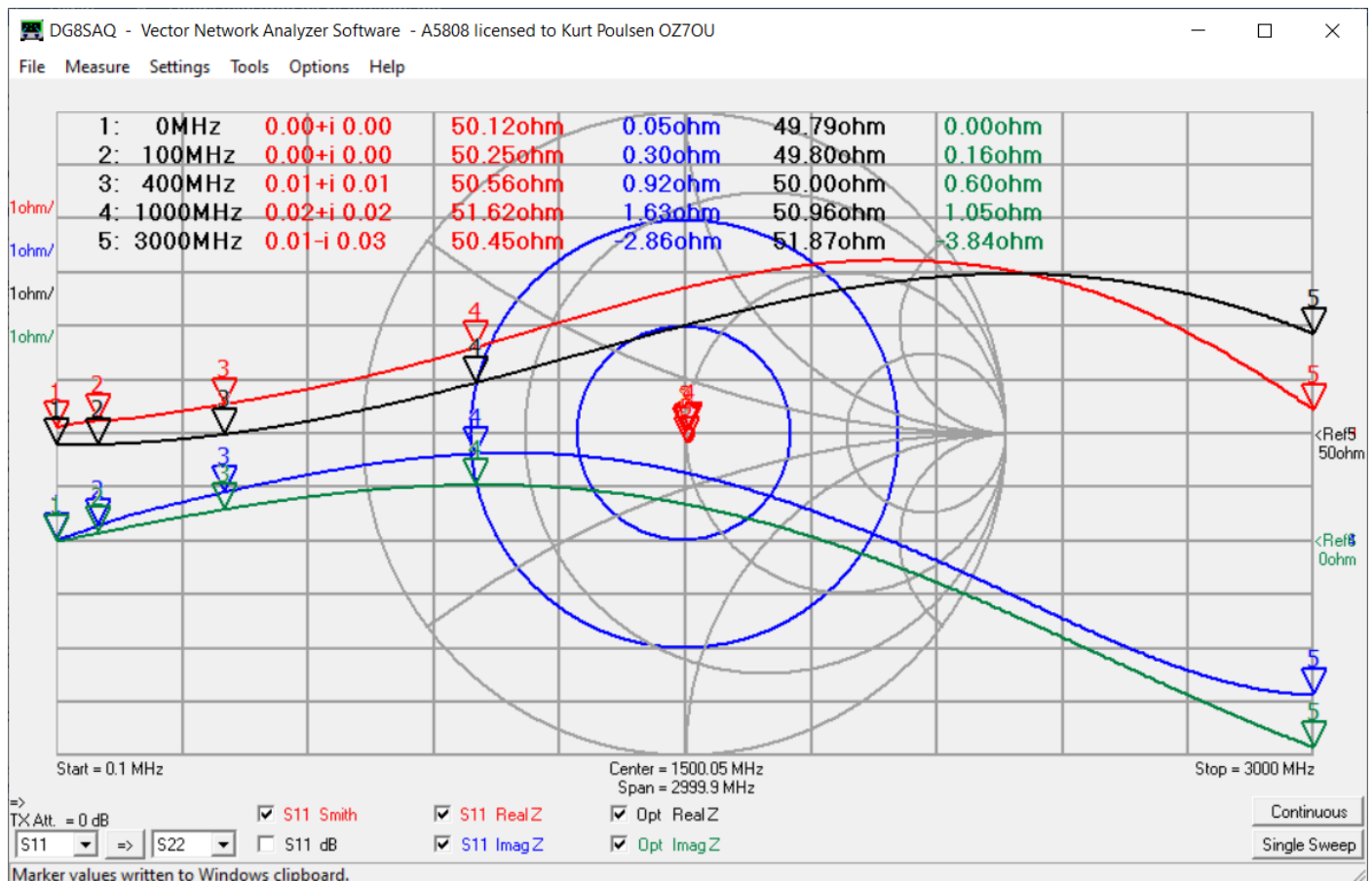
Result:

$R=49.79\text{ ohm}$   $L=221.465\text{e-12 (H)}$  two way delay=  $-141.07\text{ps}$  Offset delay=  $+70.535\text{ps}$

Due to the limitation of the NanoVNA-Saver load model not allowing no C component the fitting result is not optimum.



Fitting result

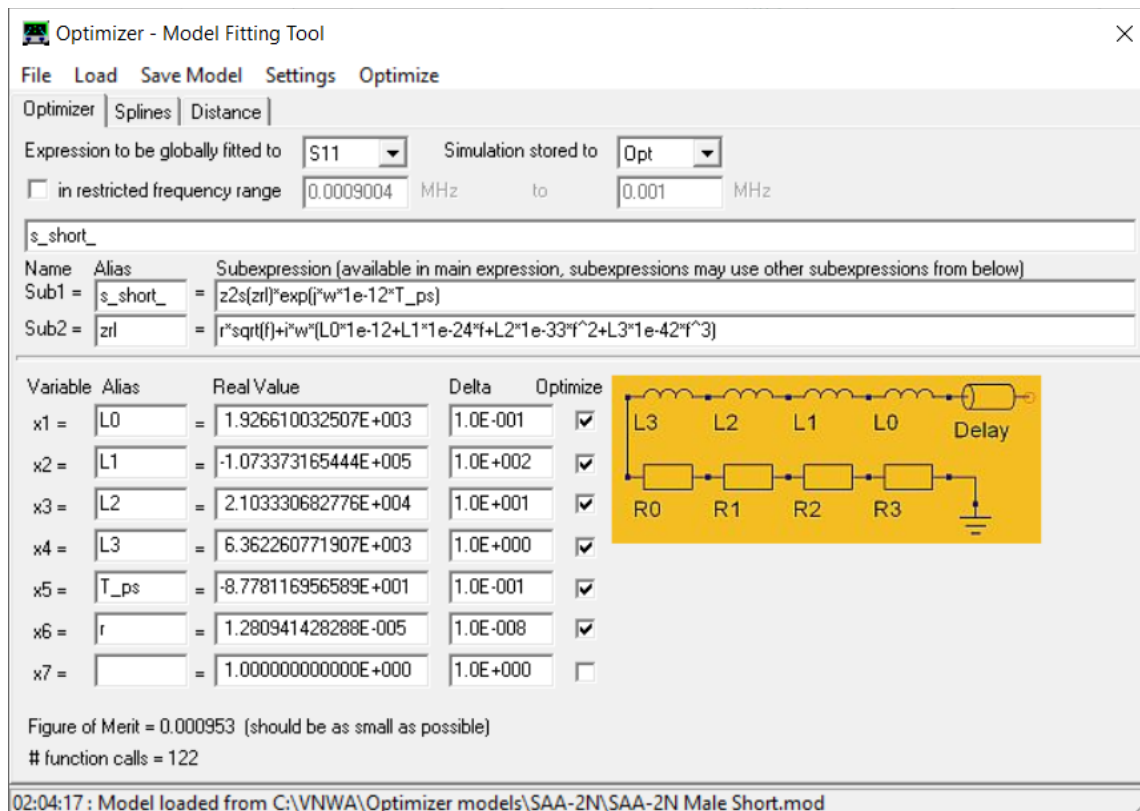


Model for SAA-2N female short

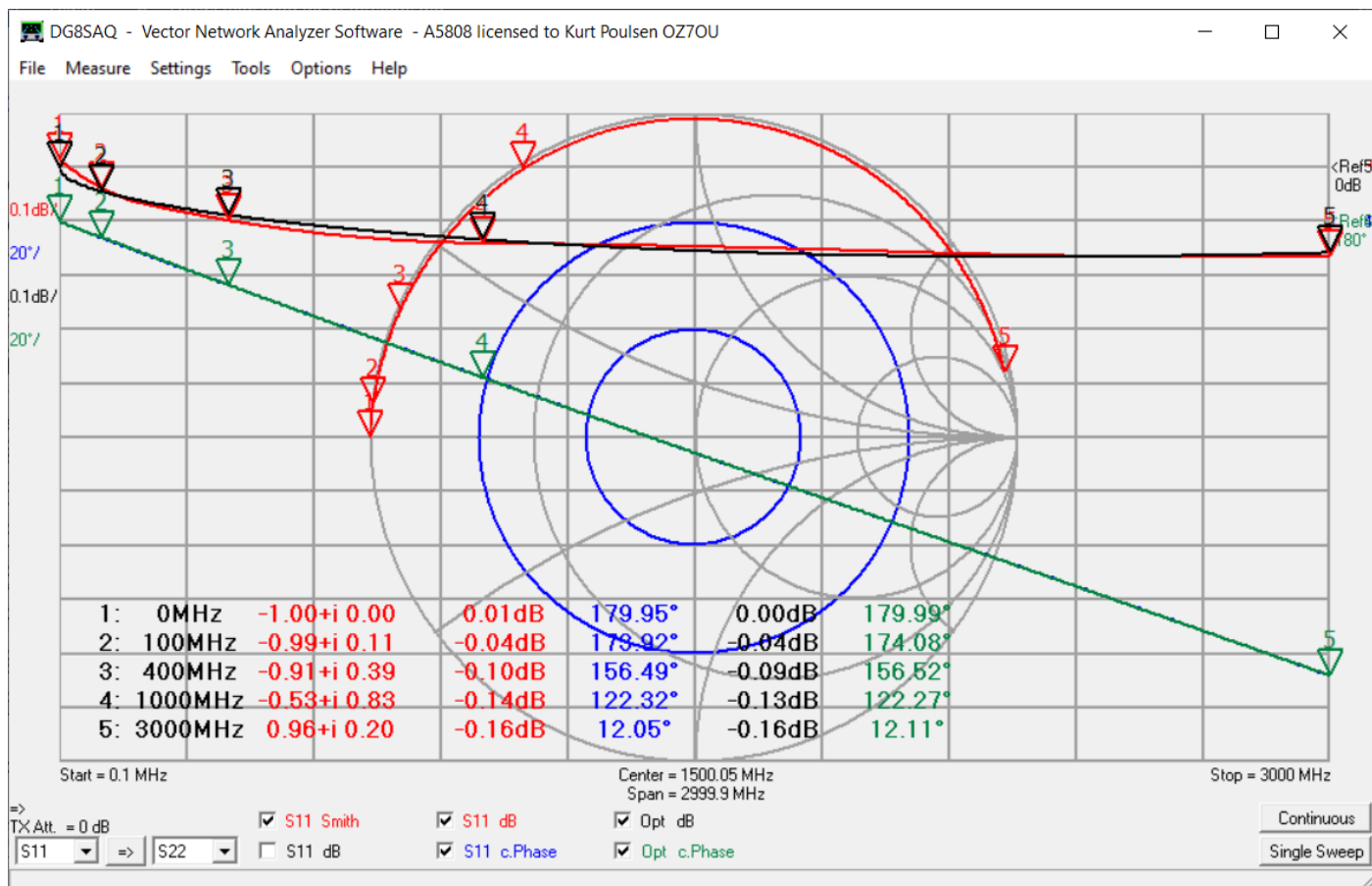
Result:

Result: delay= -87.78ps Offset delay= +43.89ps

L0= +1926.61e-12(H) L1= -107337.32e-24(H) L2= +21033.31e-33(H) L3= +6362.261e-42(H)



Fitting result

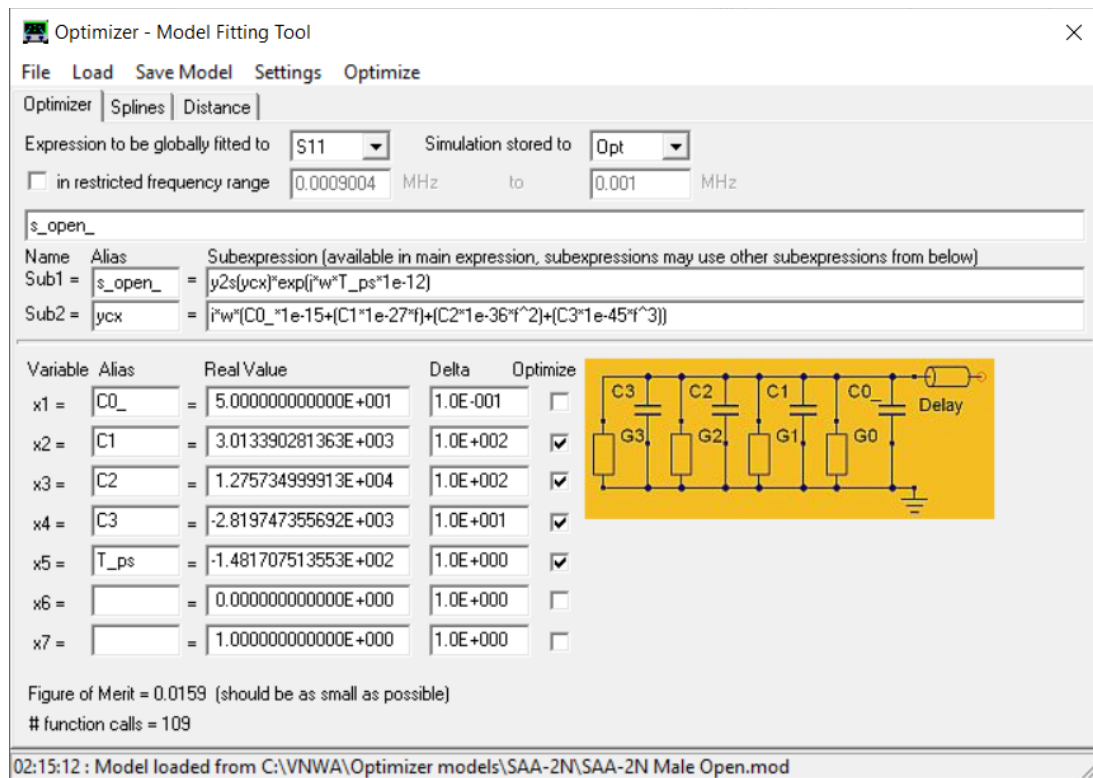


Model for SAA-2N female open

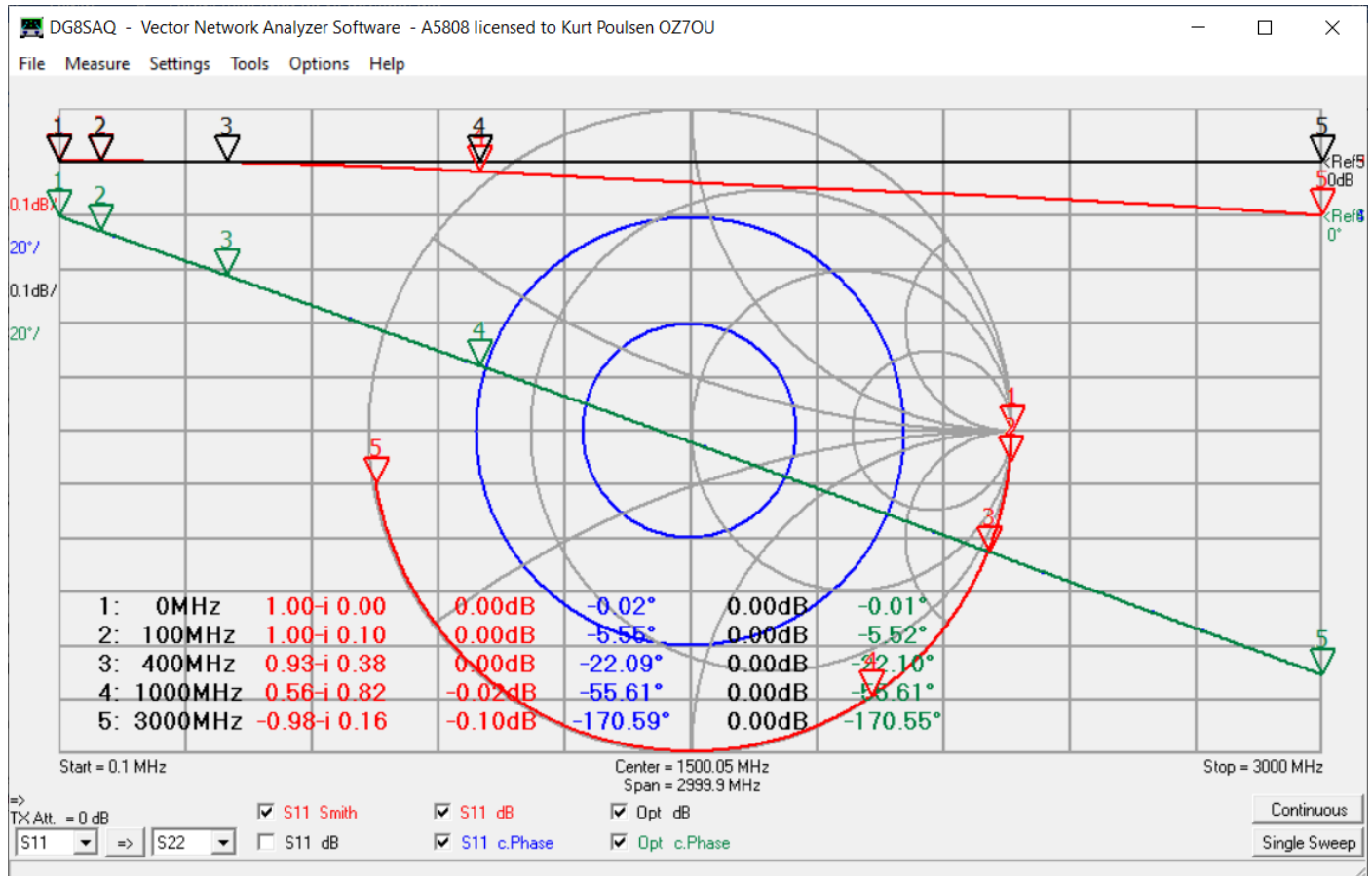
Result:

Delay= -148.1706ps Offset delay= +74.0853ps

C0= +50e-15(F) C1= +3013.39e-27(F) C2= +12757.35e-36(F) C3= -2819.75e-45(F)



Fitting result



19-09-2020 Kurt Poulsen