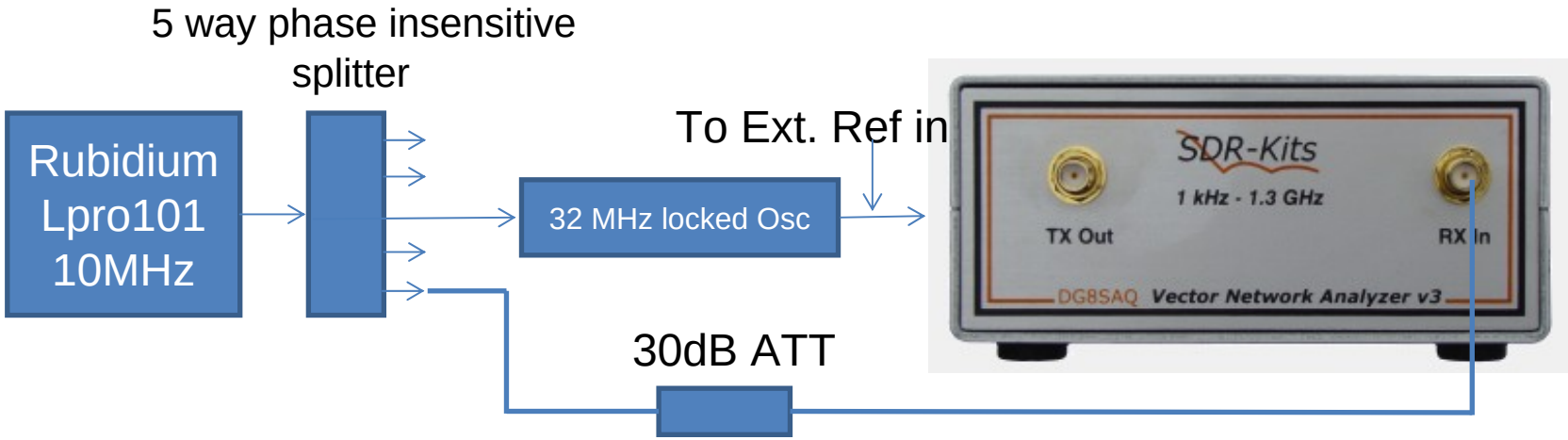
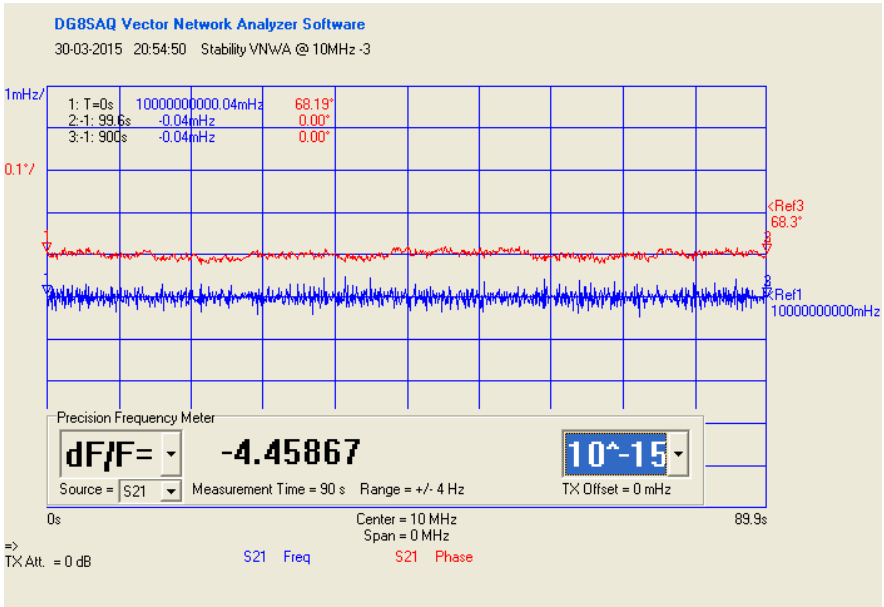
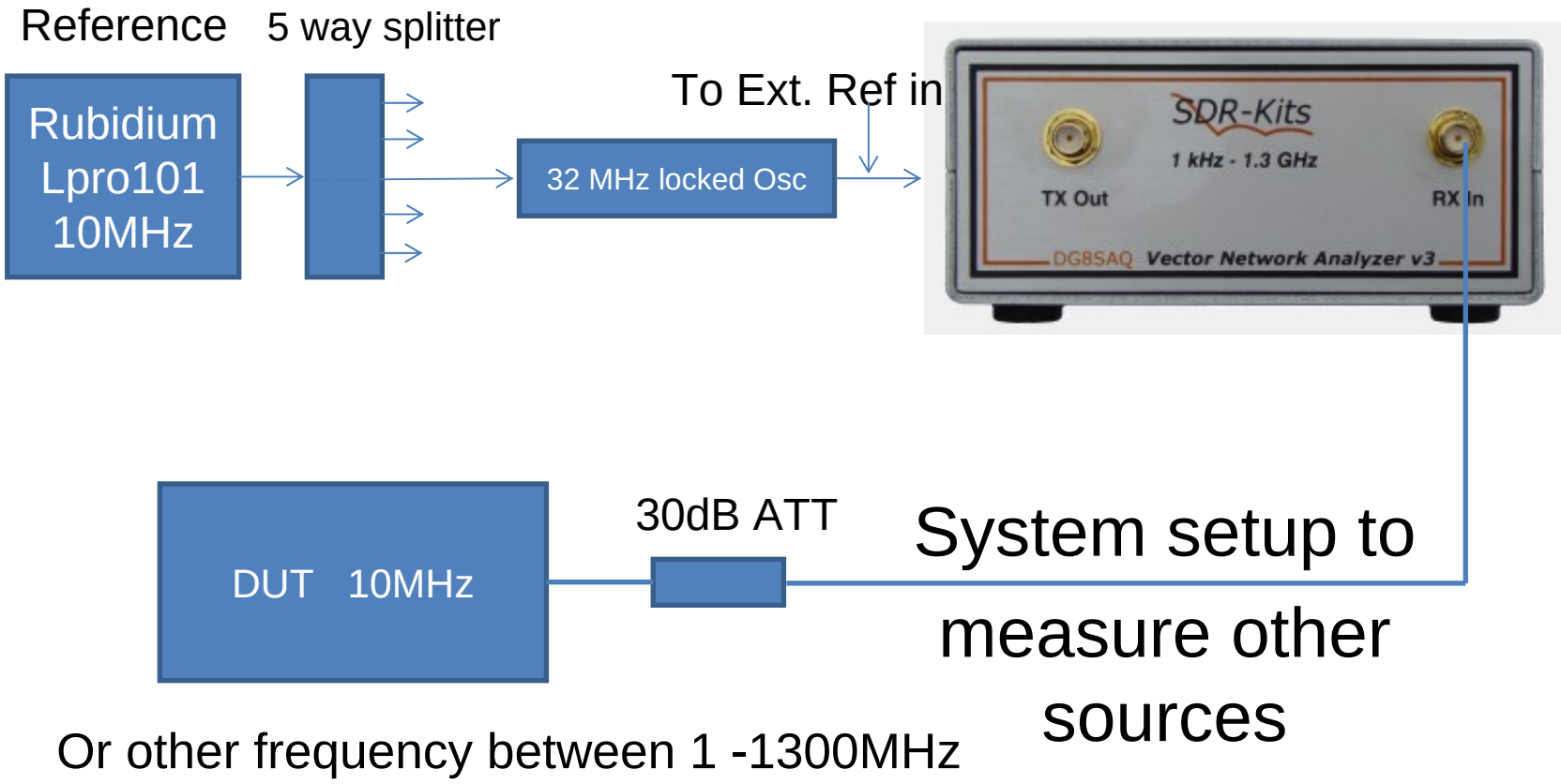
High precision frequency measurement





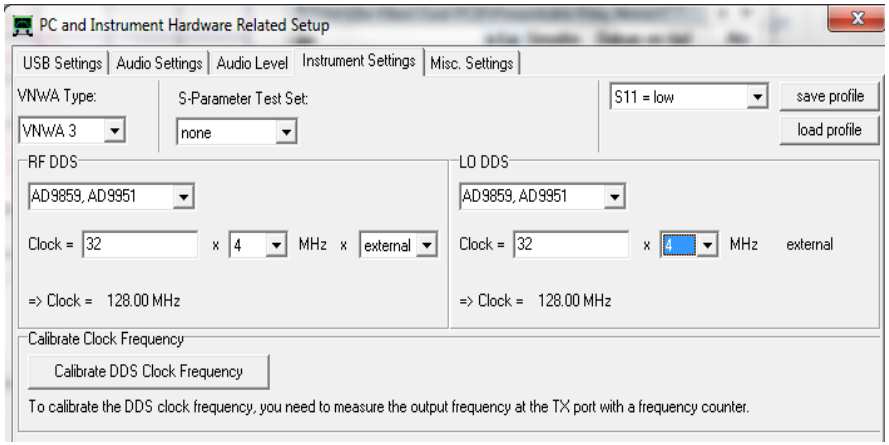
- System setup to determine measurement limit
- By measuring the same source
- Or select S11

High precision frequency measurement

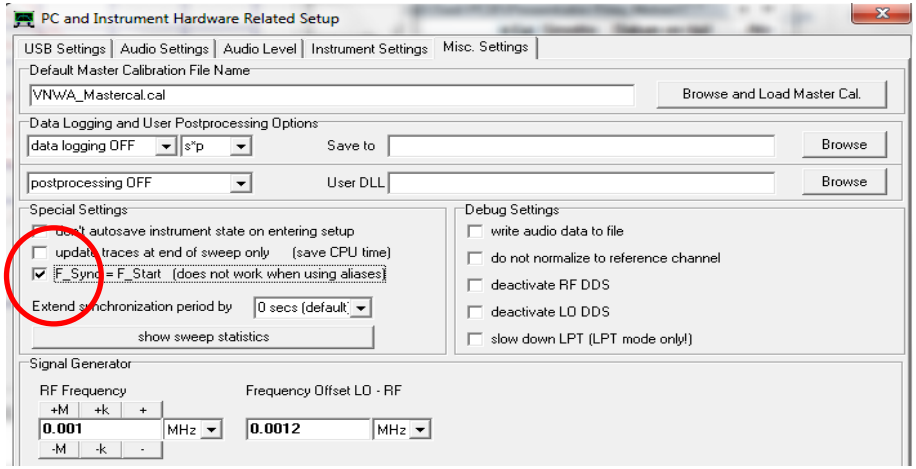


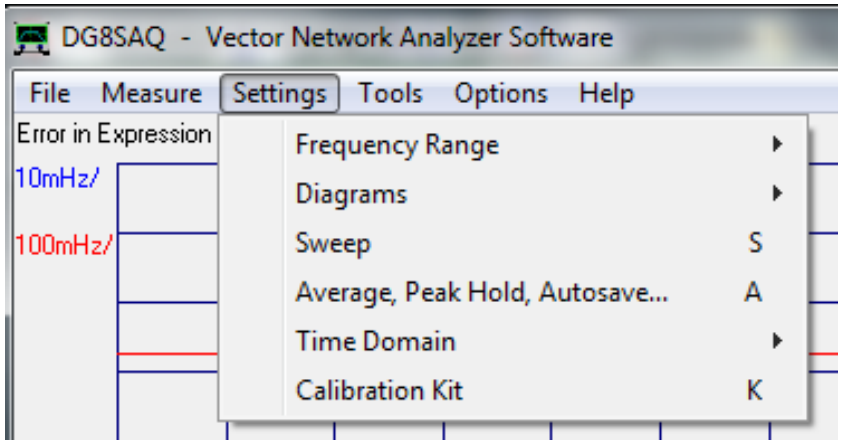
Setup VNWA

Set the reference to external, 32.0MHz

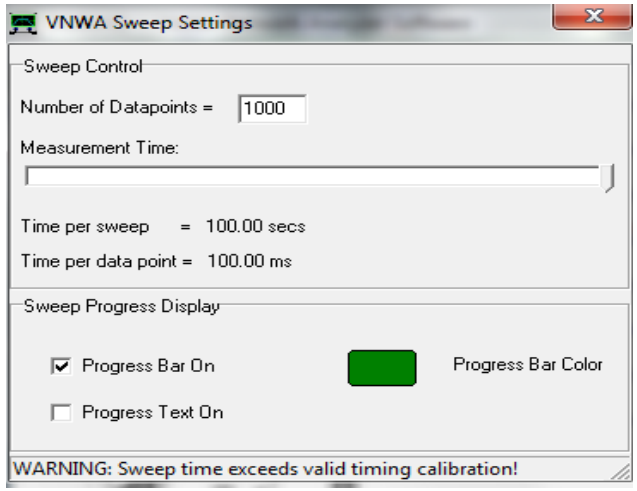


Check this box for proper phase measurement





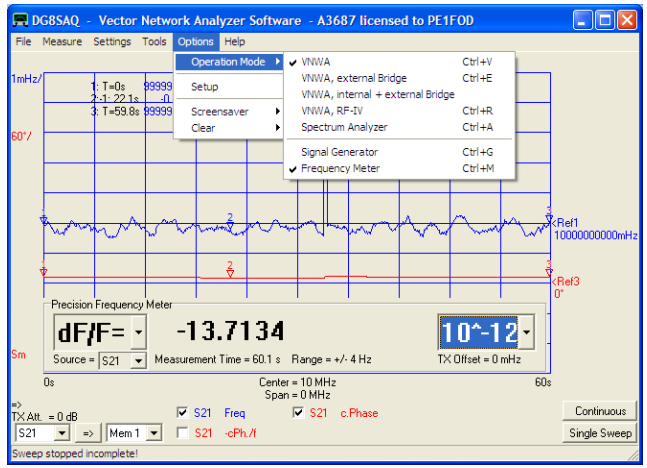
Select Sweep to set number of points



Select 100mS/point, use number of points to set measurement time

Additional settings

- Select Frequency meter
- Set scale (on the left)
- Set center frequency
- Use zero span
- To check setup select S11
- To measure DUT select S21
- TX Offset=0 if not check ext. ref. set



Stability in Numbers

Device		Min to best			
1x10-5	Xtal	5x10-5	-	5x10-6	5-50 ppm
1x10-6	TCXO	5x10-5	-	5x10-7	0.5-5 ppm
1x10-8	OCXO	1x10-7	-	5x10-9	0.1-0.005 ppm
5x10-11	Rubidium	5x10-10	-	5x13-10	
5x10-12	Cesium/ Rubidium	1x10-12	-	1x10-13	
5x10-14	H-Meser	5x10-14	-	1x10-14	
5x10-15	Crio-CO	5x10-15			
5x10-15	Cesium-fontein	5x10-15			
5x10-18	Aluminium	5x10-18			

References

PLL-1032-all102.pdf

10M-REF5-all106c.pdf

Lpro101-Connect.pdf

Location @
http://www.pe1rqm.nl/hamforum/projecten-van-timo-pe1fod
or
http://www.pe1rqm.nl → select “PE1FOD’s projecten”