HF - VHF wireless analyzer

Measuring antenna from the shack

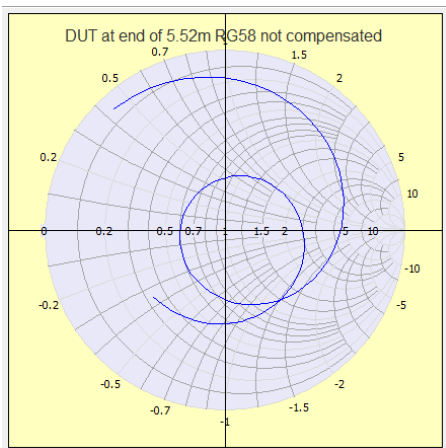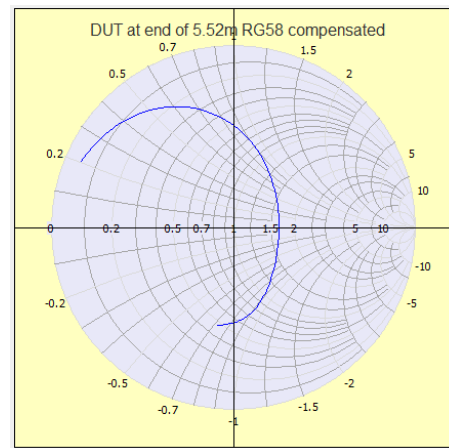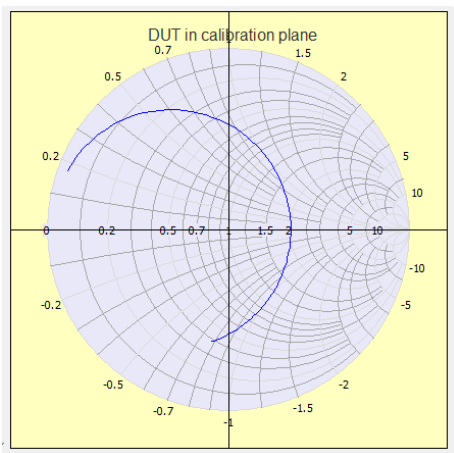How to compensate for an unknown cable length

PRO

miniVNA

mini RADIO SOLUTIONS

Measuring the antenna at the end of a cable with unknown length?

We need the length, and this could be measured with the miniVNA PRO, select wanted frequency sweep area, set the number of steps to 100 and show the smith chart. Short-circuit the far end of the cable (antenna side) and open the window "Cable offset" in the tools menu. Check "Use cable offset length" and start continuous measuring. Adjust the curve in the smith chart to end up as a short line/curve at 0 (zero) in the chart (with the + and – buttons). This will be the length of the cable. Connect the antenna at the antenna side and do the measurements!
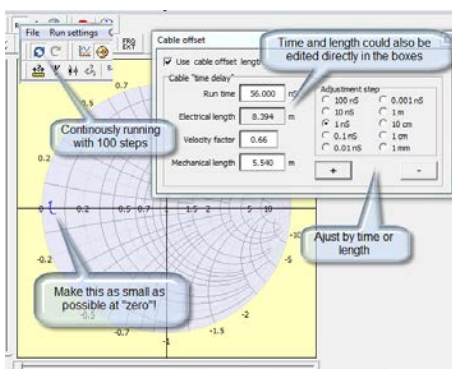
Illustrations:

When using "time" as base for adjustment, the velocity factor is not involved in the calculations.

If you know the mechanical length, the velocity factor can be changed in small steps to find the exact value, or it can be calculated directly by dividing the mechanical length, measured with a tape measure or a folding ruler, and the electrical length calculated by the program!

Happy measuring from the shack!

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