

---

## MEASUREMENTS OF L/C FILTER WITH COAX AS PARALLEL CAPACITOR

---

Below are the results of resonance-frequency determination of a parallel L/C filter, in which the capacitor consists of a section of coax cable. The terminals of this capacitor are formed by the center-conductor of the coax at one end of the coax, and the coax-shield at the other end of the coax.

Two test methods were used:

1. miniVNA analyzer in transmission mode, with one end of the filter connected to the DUT port (excitation), and a sniffer-coil connected across the DET port.
2. Dipmeter.

Each of these two methods was used twice:

- A. exciting the filter from the side of the coil connected to the center-conductor of the coax capacitor; see Figure 1.
- B. exciting the filter from the side of the coil connected to the shield of the coax capacitor. See Figure 2.

The measurement results from the miniVNA are shown in Figures 3 and 4.

Summary of results:

- Method 1A: resonance frequency found is 11,660 MHz
- Method 1B: resonance frequency found is 12,340 MHz
- Method 2A: resonance frequency found is 12,7 MHz
- Method 2B: same

Note that the results from method 1A and 1B are not the same!

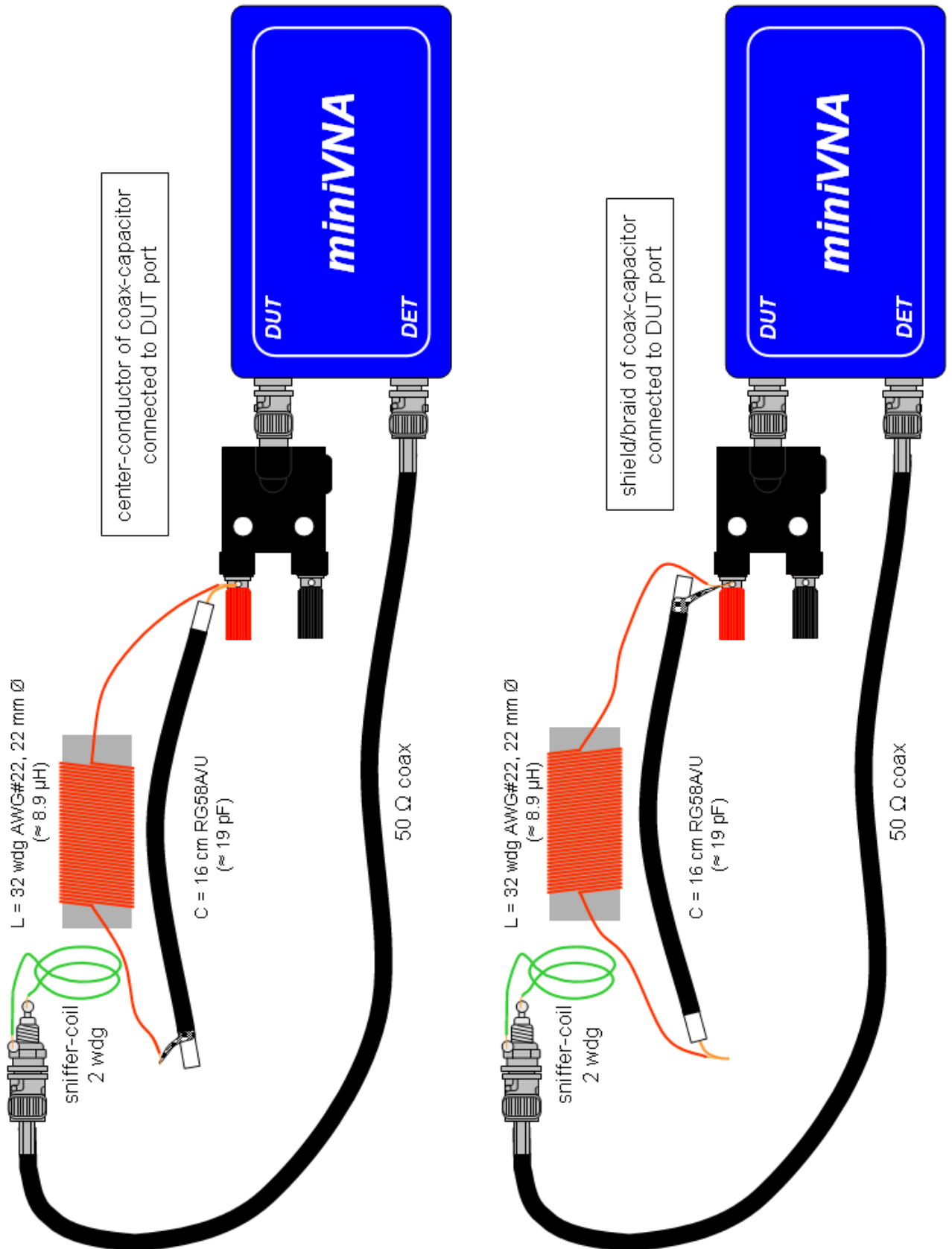


Figure 1 Test setup with miniVNA

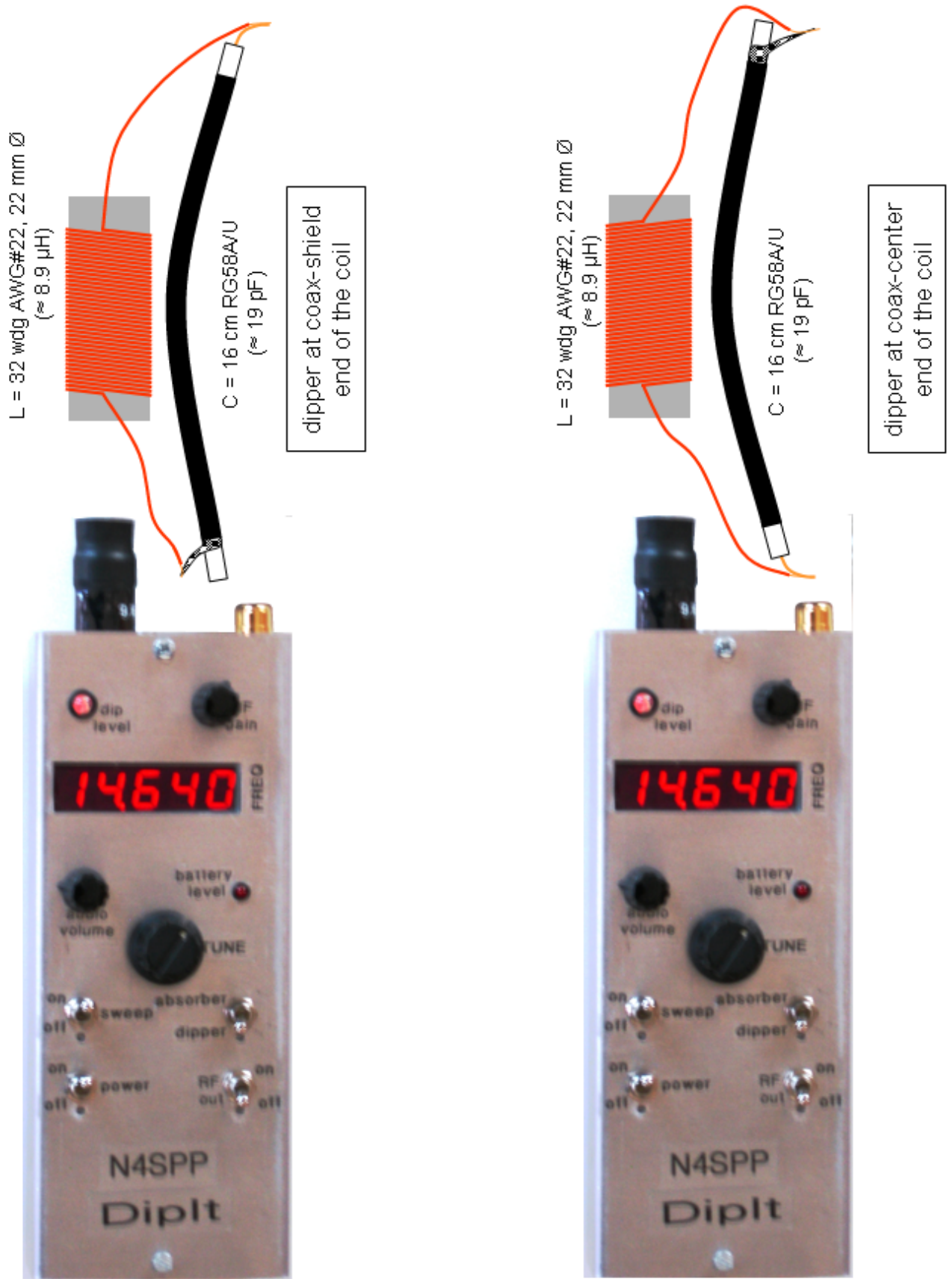


Figure 4 Test setup with dipmeter

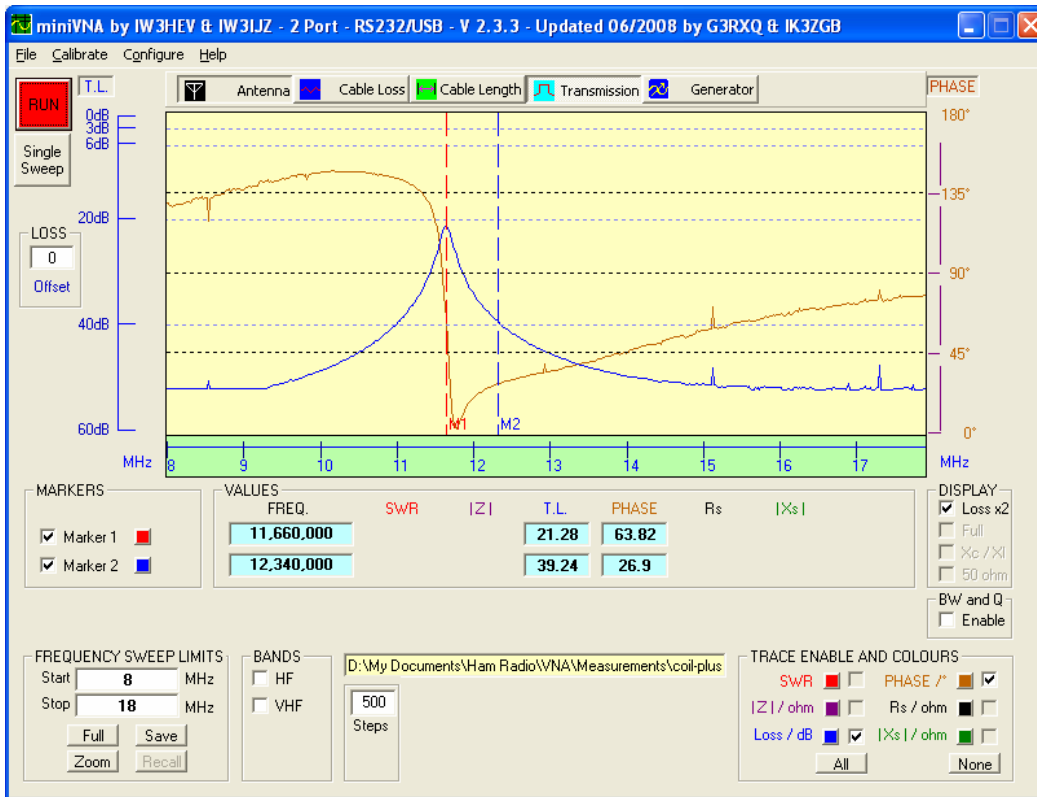


Figure 1 Center-conductor of coax-capacitor connected to DUT port of miniVNA

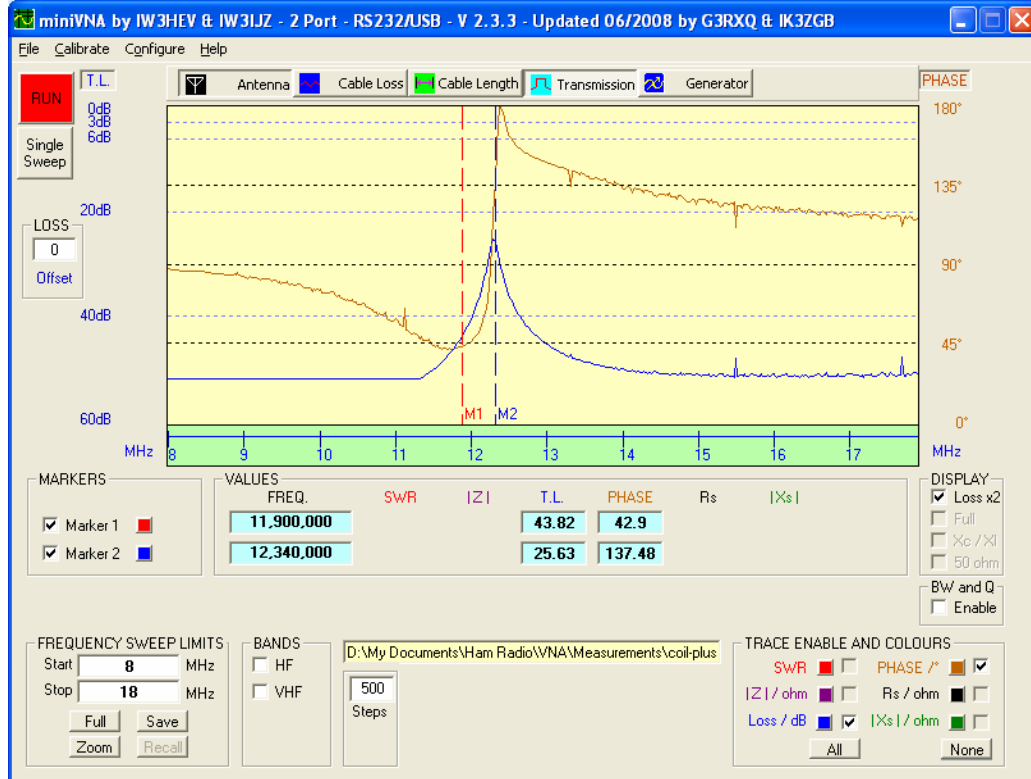


Figure 2 Shield of coax-capacitor connected to DUT port of miniVNA