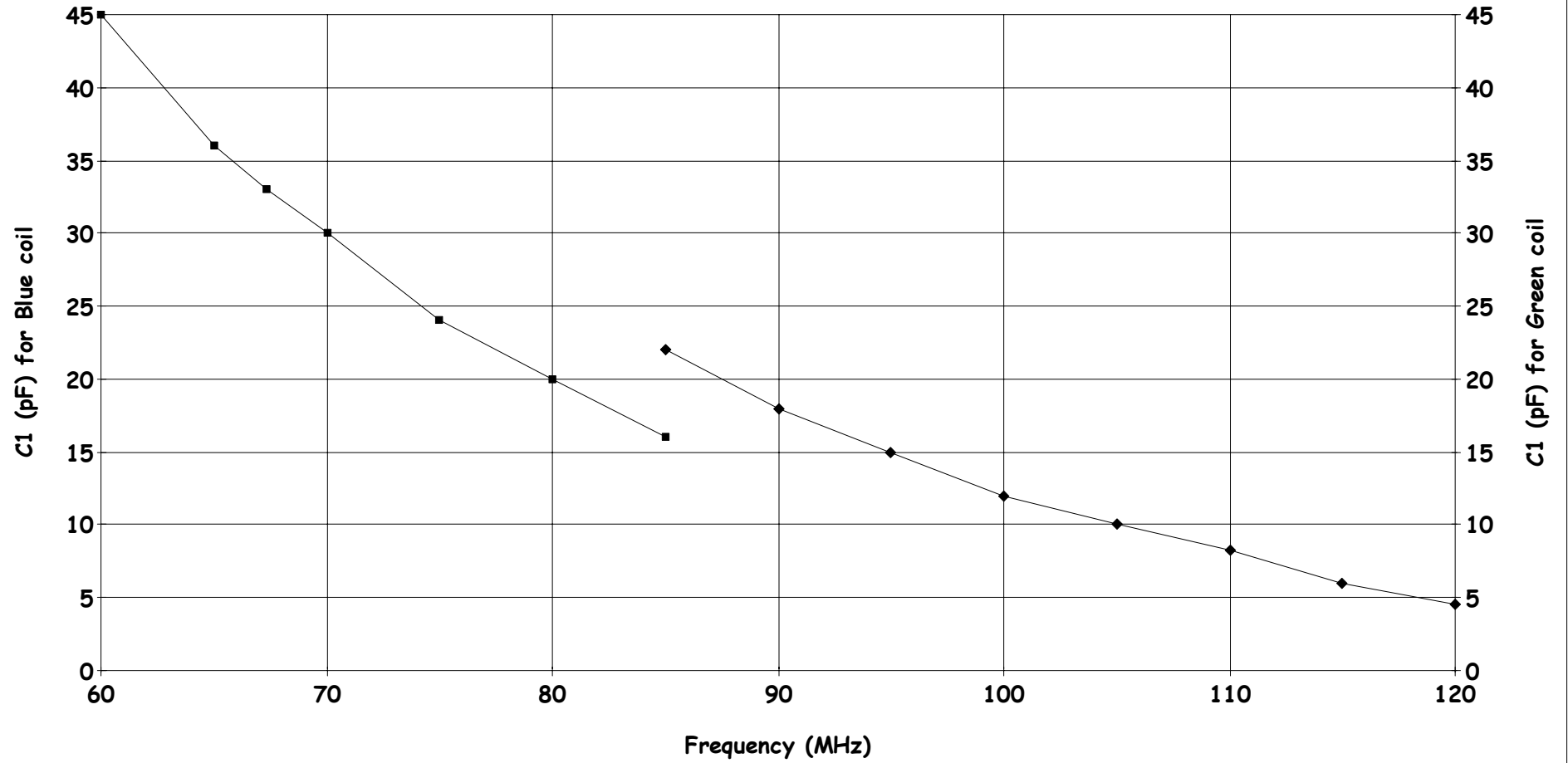


**C1 value vs Frequency chart for EME65
for Blue (120nH) and Green (98nH) coil**



EME65 Notes

The capacitor, C1 on the collector of the 1st transistor in the Butler Oscillator is only valid for one frequency of each version of the EME65 kit. 400 MHz for the LF version of the oscillator and 500 MHz for the HF version. This also applies to the G4DDK004 and other versions (G4DDK001 and G3WDG boards).

This can be verified by replacing the Quartz crystal with a 47 ohm resistor and a series 100pf capacitor and noting the resonance of the free running oscillator on a FM RX, scanner, frequency counter or analyser.

The Butler oscillator, (with a crystal) does oscillate, even though the values are incorrect, mainly due to high values of gain around the circuit.

I used some measurements and also calculated some values to give the resulting chart.

This will make it easier to tune the oscillator correctly and appears to remove some of the instability problems noted previously

I have tried a number of crystals and they all tuned across their series resonance points. (the crystals were checked for their series resonance points as they may differ from what is noted on the package due to aging/ accuracy)

Thanks To

Kevin Murphy, ZL1UJG

Co-editor of NZART Magazine VHF Column

For Supplying this information.