

Q-METER CALIBRATION

I've come across a much better method for determining accuracy per a note from Erwin (W2FTN) which requires no "standard" test coils. This has been verified against two known accurate Q-meters and seems to work well.

Q is also defined as the ratio of the resonant peak frequency to it's -3db voltage bandwidth. The accurate frequency counters available today, make those measurements easy.

For example: for a given 4000KHz resonance the meter indicates "157" on the Q scale of the voltmeter, so 0.707 voltage would be at "111" (a 0.707 voltage ratio is -3db, a 0.5 power ratio is -3db). Measuring the frequencies at the two "111" points gives 4013.5KHz and 3983.3KHz or a 30KHz BW. Dividing 4000KHz by 30KHz gives 133.3 as the calculated Q. The Q meter can now be readjusted to show "133". There are some linearity assumptions made for the Q meter scale, but this method is better/easier than anything I've come across."