

# Device Modeling Report

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**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

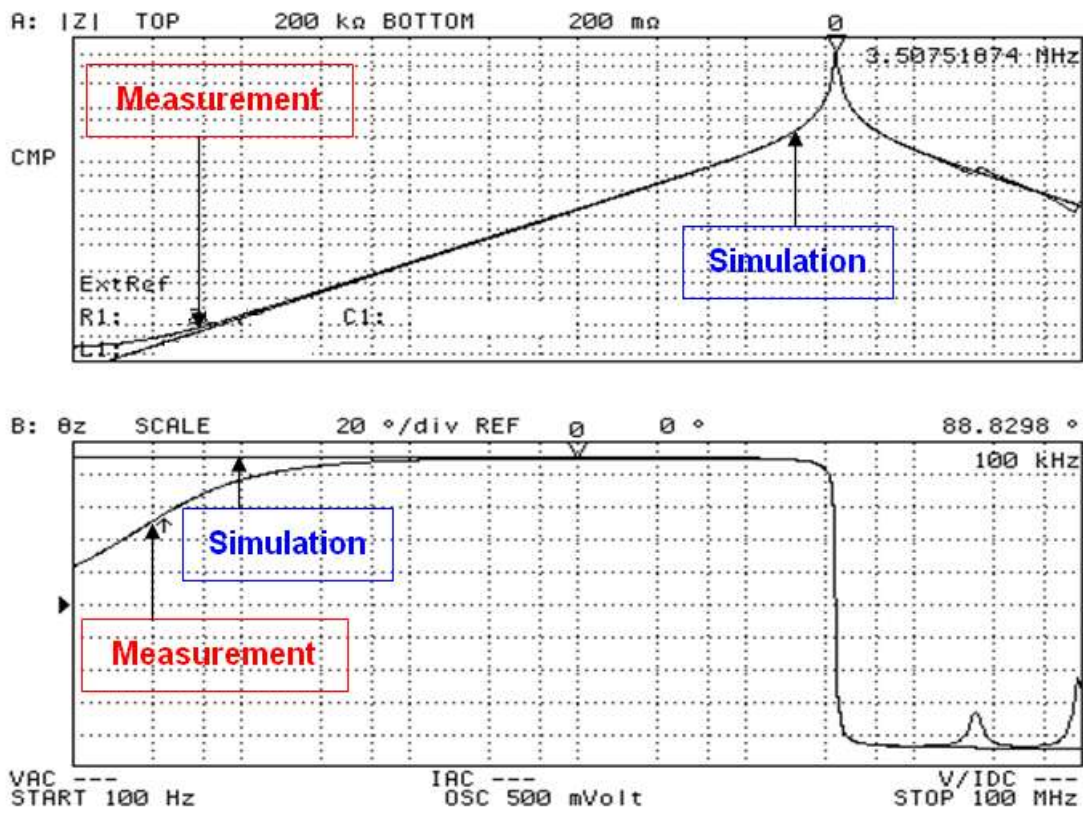
### Optimization of Simulation

Range of adjustment Frequency: 100 to 100M(Hz)

Frequency vs.  $|Z|$  and Frequency vs.  $\theta z$  Characteristic

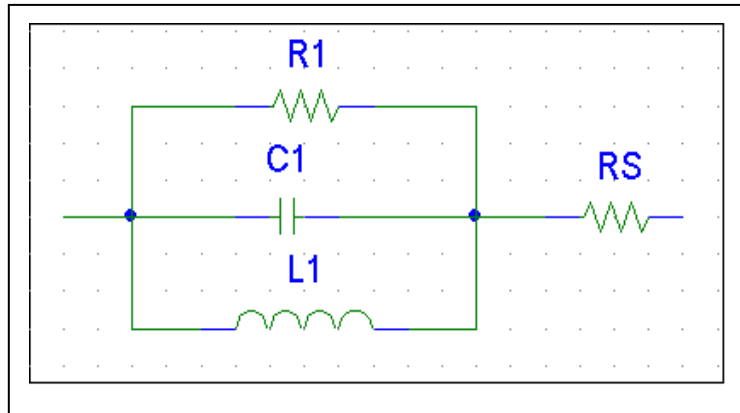
Attention)

*Please use SPICE MODEL within the range from 100 to 100M(Hz)*



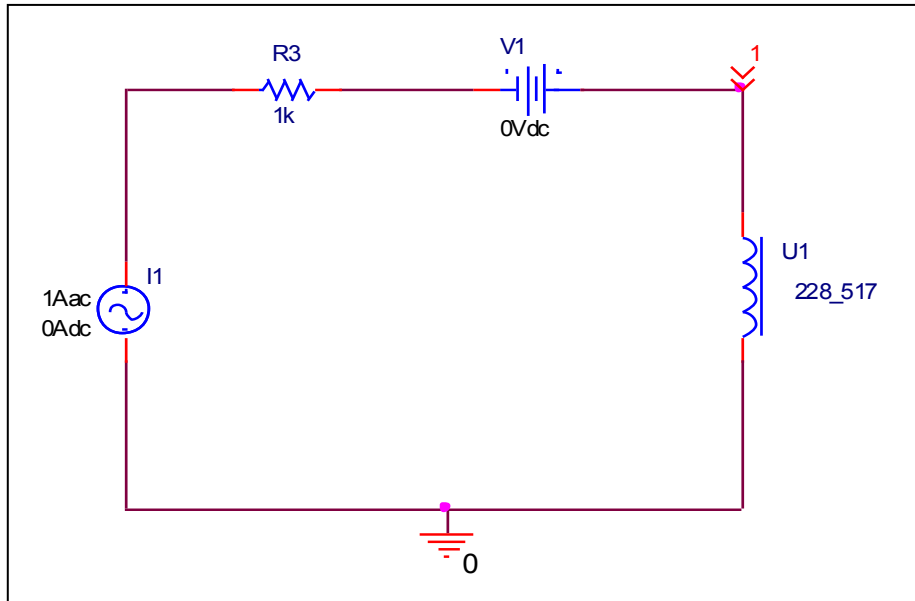
L1	
C1	
R1	

Equivalent circuit

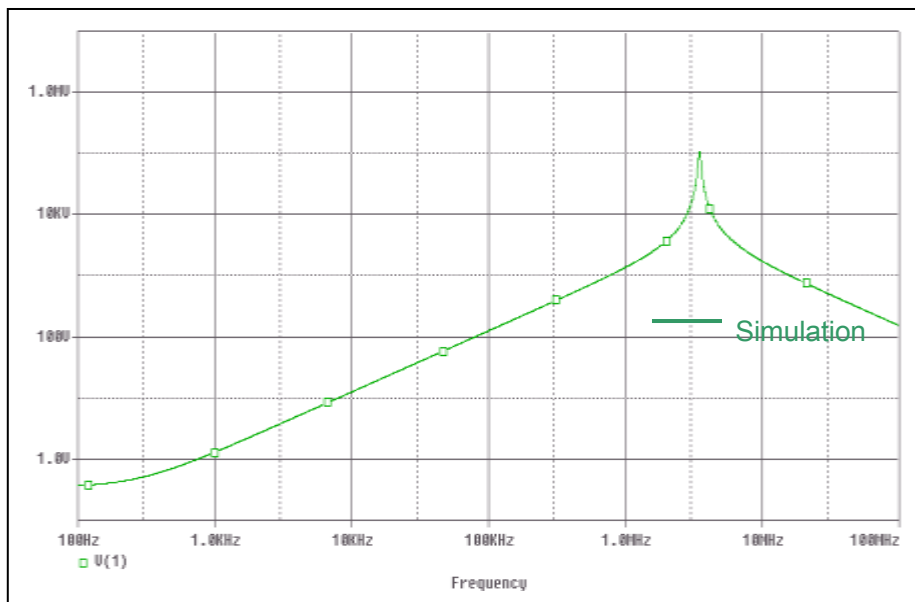


# Frequency vs. $|Z|$ Characteristic

## Evaluation circuit



## Simulation result



Comparison Table

Frequency (Hz)	Z (ohm) : Measurement	Z (ohm) : Simulation	% Error
<b>100</b>	366.056 m	367.478 m	-0.388
<b>100K</b>	130.962	125.402	4.246
<b>1M</b>	1.37192 k	1.3656 k	0.461
<b>10M</b>	1.70162 k	1.752 k	-2.961

	Measurement	Simulation	% Error
<b>F<sub>SRF</sub> (Hz)</b>	3.508 M	3.482 M	0.741
<b> Z  (ohm), at F<sub>SRF</sub></b>	106.695 k	106.751 k	-0.052