

# Device Modeling Report

COMPONENTS: Crystal Unit  
PART NUMBER: HC-49/U-S5.000MHz  
MANUFACTURER: KYOCERA KINSEKI Corporation



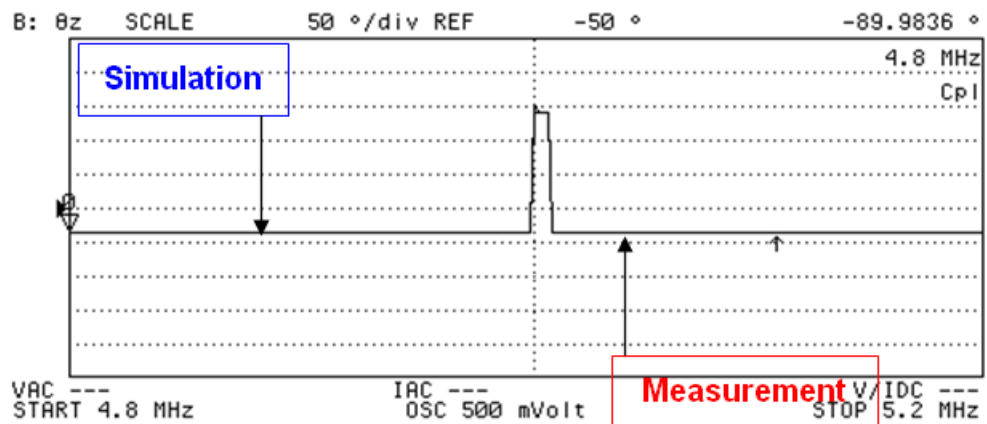
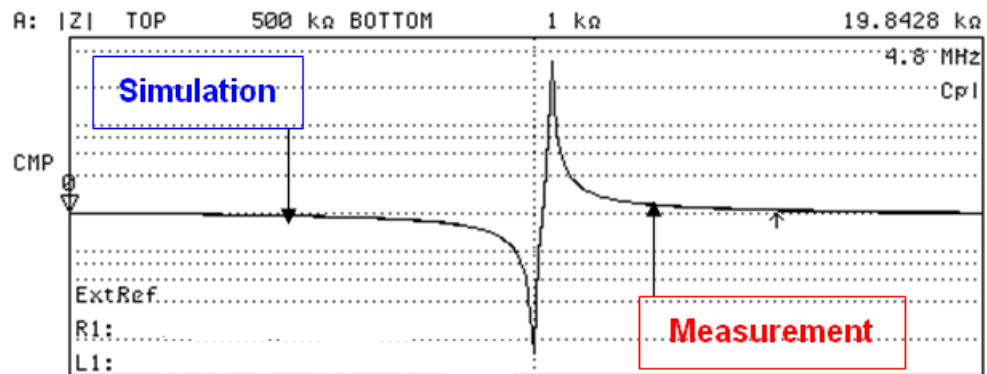
**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

### Optimization of Simulation

Range of adjustment Frequency: around resonance frequency of device

Frequency vs.  $|Z|$  and Frequency vs.  $\theta_z$  Characteristic



L1	
C1	
R1	
C0	

## Equivalent circuit

