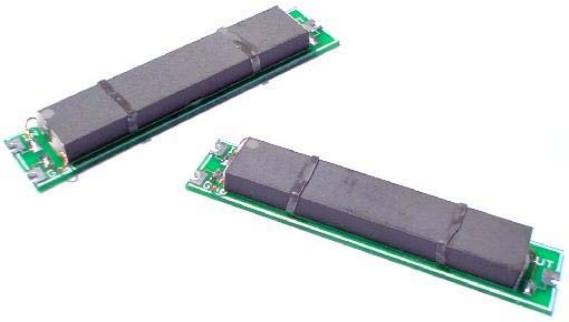
Micromechatronics Inc.
200 Innovation Blvd., Suite 155 ; State College, PA 16803-6602, USA
Phone: (814) 861-5688 ; Fax: (814) 861-1418. www.mmech.com

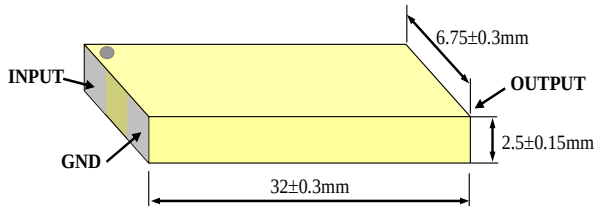
Data Sheet LNA3207A-PCB mounted

Description: High Voltage 5W Rosen Piezoelectric Transformer

Parameter	Value	Notes
Rated Output Power	5W	R_L = 100 kΩ - 150 kΩ
Dimensions of the PT	32^L x 6.75^W x 2.5^t mm	
Resonant mode	λ / 2 mode	
Driving Frequency	51 ~ 53 kHz	R_L = 100 kΩ - 150 kΩ

1. Aspect and Dimensions





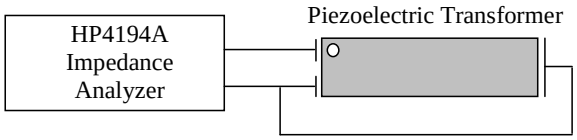
2. Electrical Specifications

Table 1. Electrical characteristics

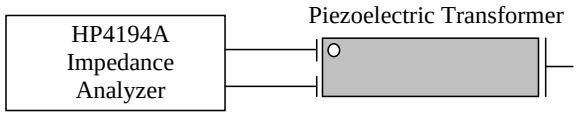
Item	Symbol	Spec.	Notes
Resonance frequency	fr	49.1 kHz ± 5%	1Vrms (Note 1)
Capacitance (primary)	Ci	196 nF±20%	1kHz,1Vrms (Note 1)
Capacitance (secondary)	Co	18 pF±20%	1kHz,1Vrms (Note 2)
Step-up ratio	Av	75 ±10	RL=150kΩ, Pout=5W (Note 3)
Efficiency	η	≥ 93%	RL=150kΩ, Pout=5W (Note 3)

Note 1: fr and Ci is measured with Circuit 1.
Note 2: Co is measured with Circuit 3.
Note 3: Step-up ratio and Efficiency is measured at 3 frequencies (49.5kHz, 50.5kHz and 51.5kHz) with the testing circuit shown in Circuit 5. Then, a maximum value for step-up ratio and efficiency is obtained in the range of these 3 frequencies.

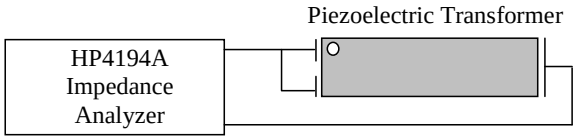
3. Test Methods



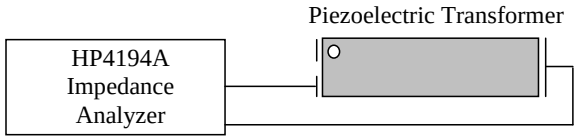
Circuit 1. It measures input impedance under output shorted to gnd.



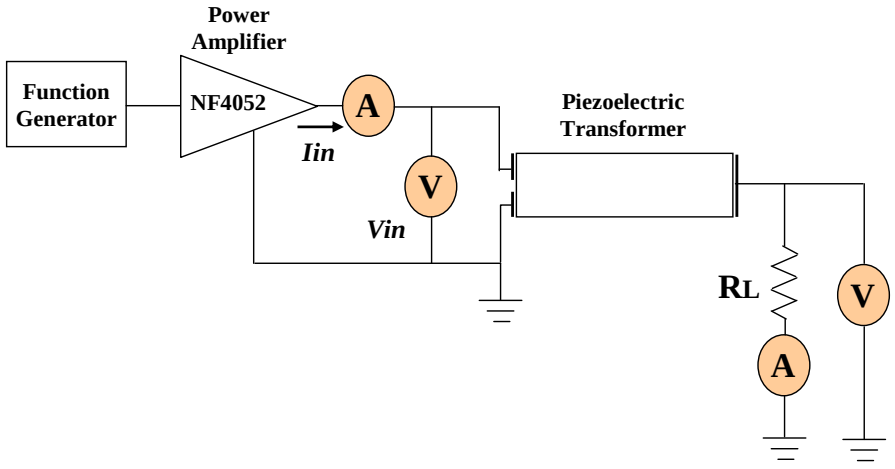
Circuit 2. It measures input impedance with output open



Circuit 3. It measures output impedance under input shorted to gnd.



Circuit 4. It measures output impedance with input open



Circuit 5. Used for the power tests.

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4. Impedance Measurements (using HP4104A under 1Vpp)

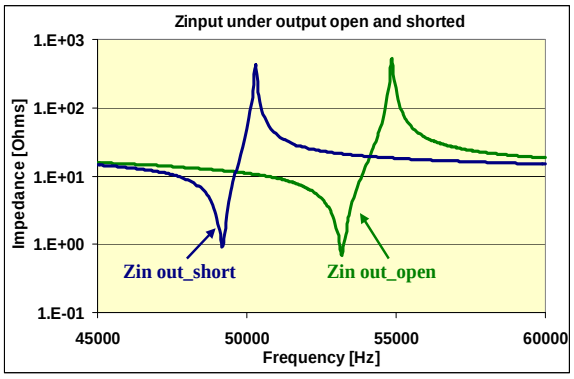


Figure 3.1. (Using Circuit 1 and 2)

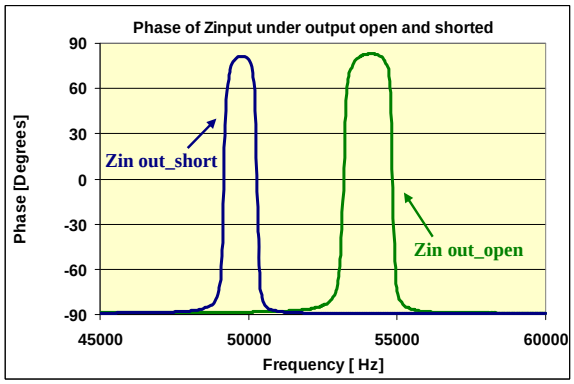


Figure 3.2. (Using Circuit 1 and 2)

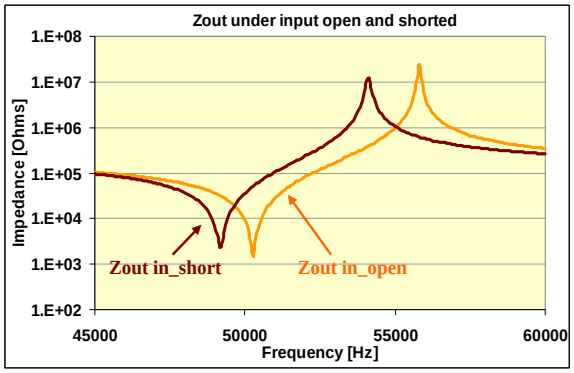


Figure 3.3. (Using Circuit 3 and 4)

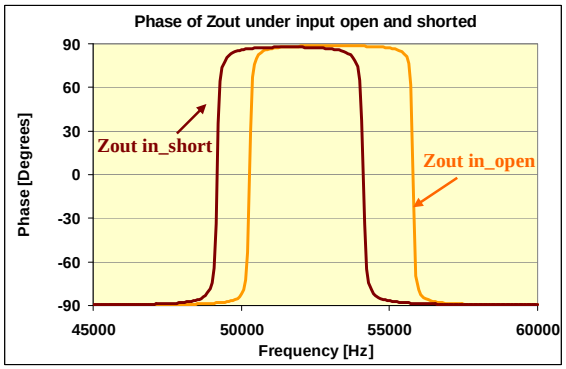


Figure 3.4. (Using Circuit 3 and 4)

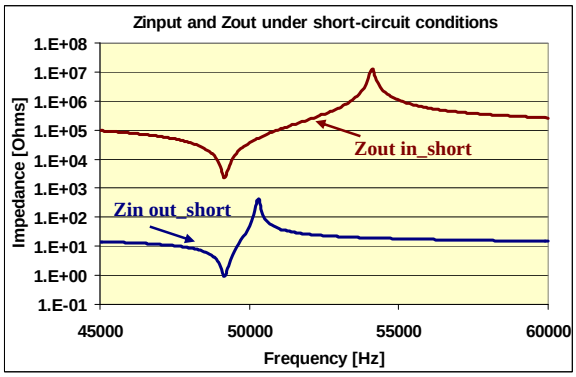


Figure 3.5. (Using Circuit 1 and 3)

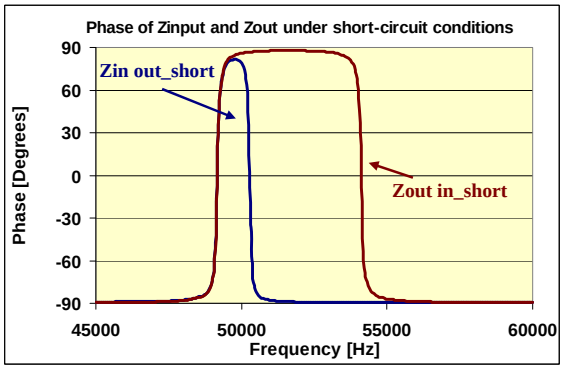
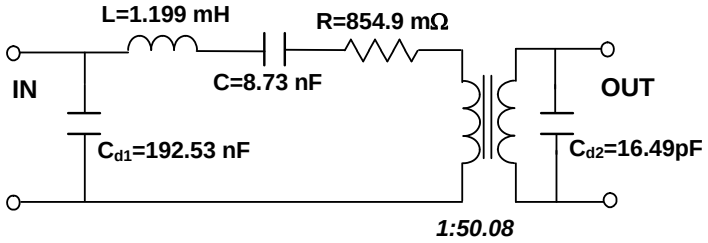


Figure 3.6. (Using Circuit 1 and 3)

5. Equivalent Circuit



Equivalent circuit under 1 Vpp input AC voltage.

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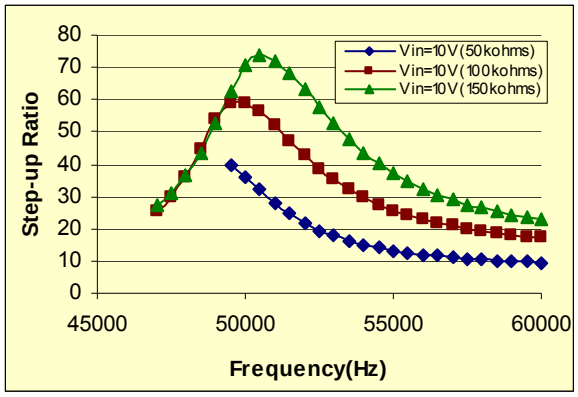
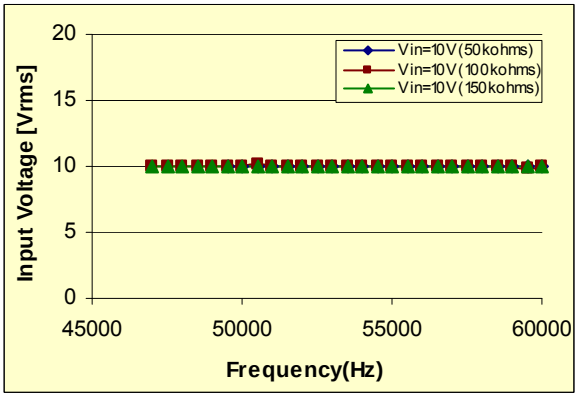
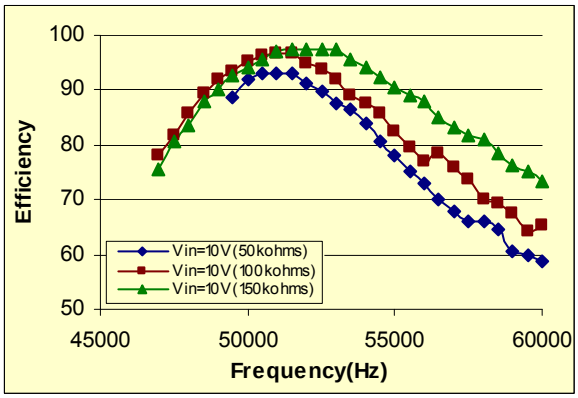
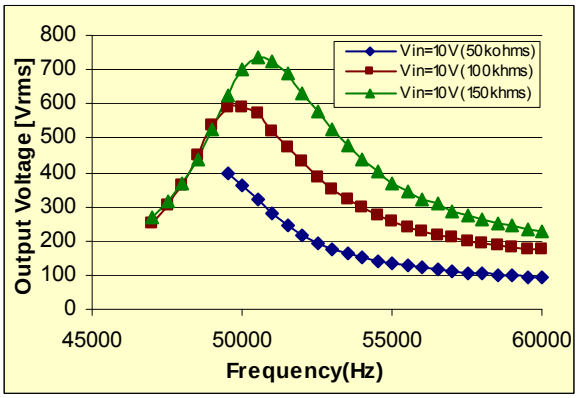
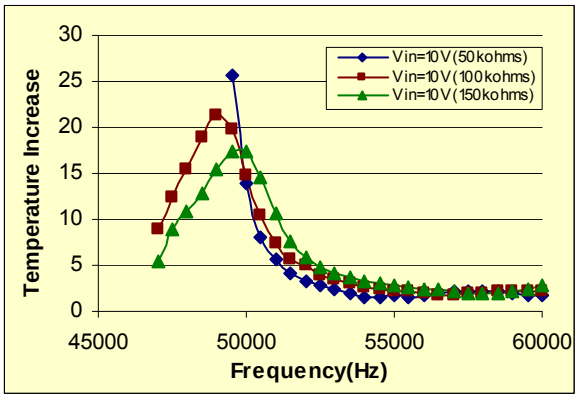
6. Tests at Vin=10Vrms

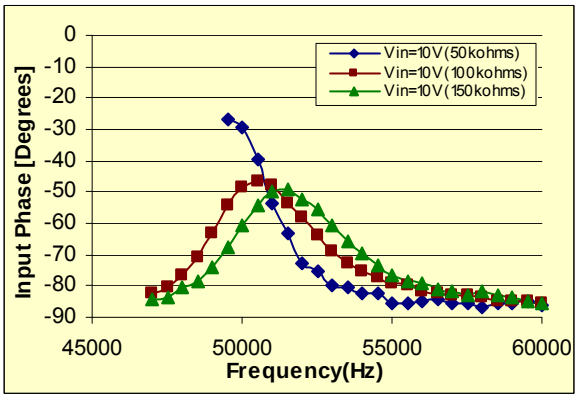


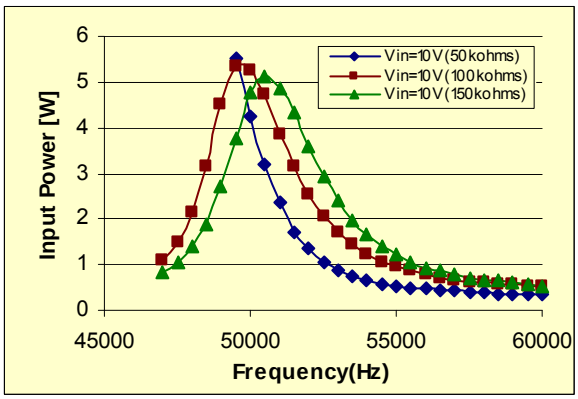


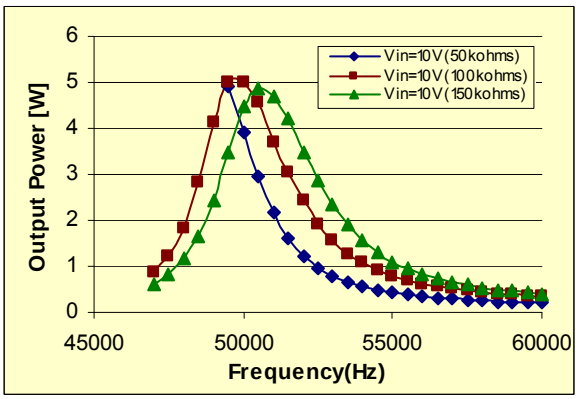












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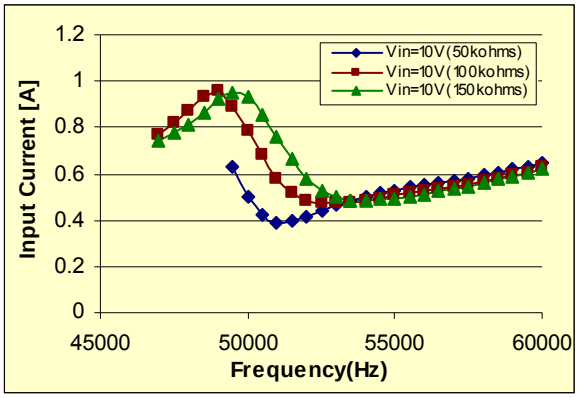

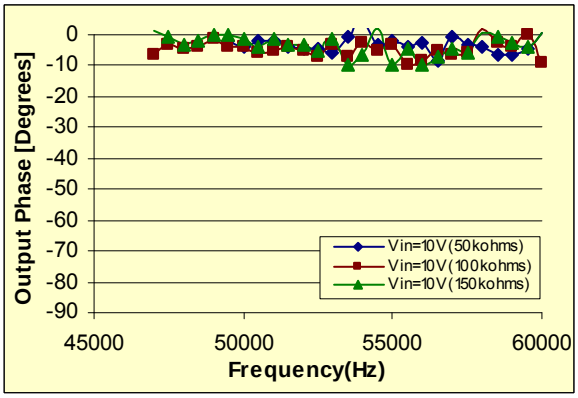

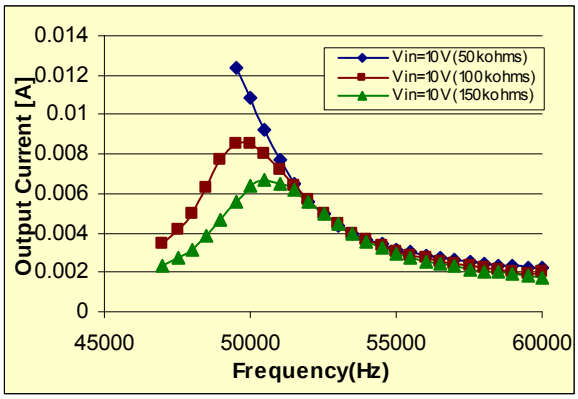

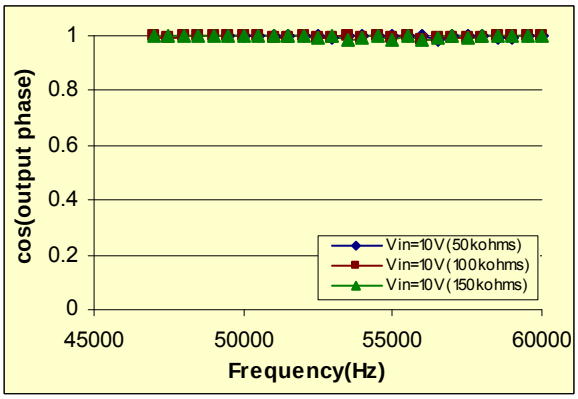

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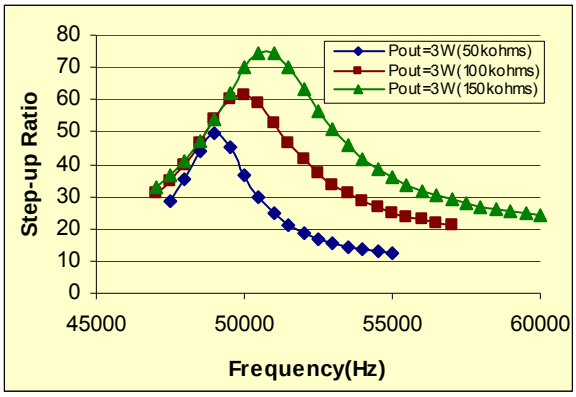
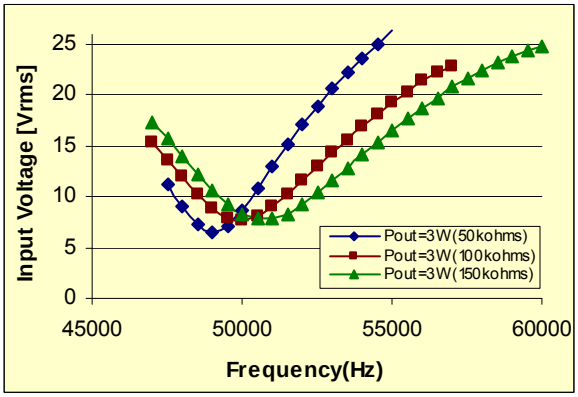
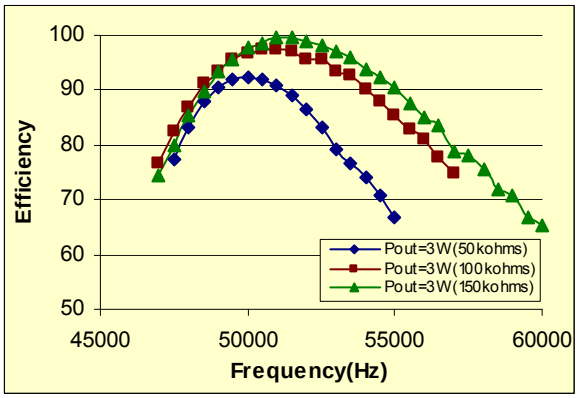
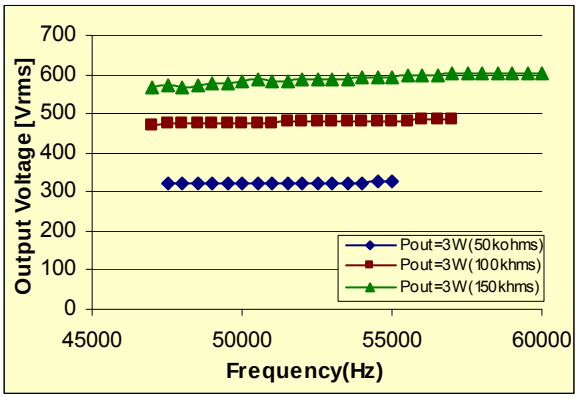
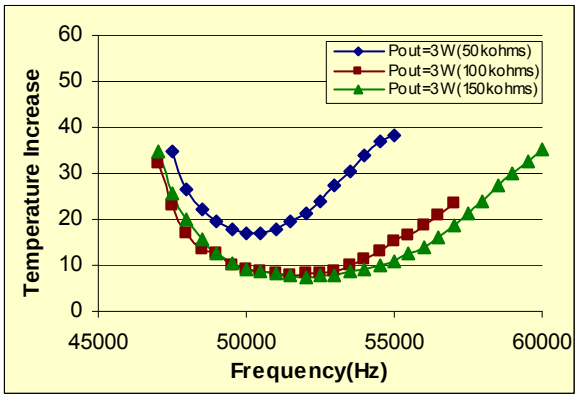
7. Power Tests (P=3W)

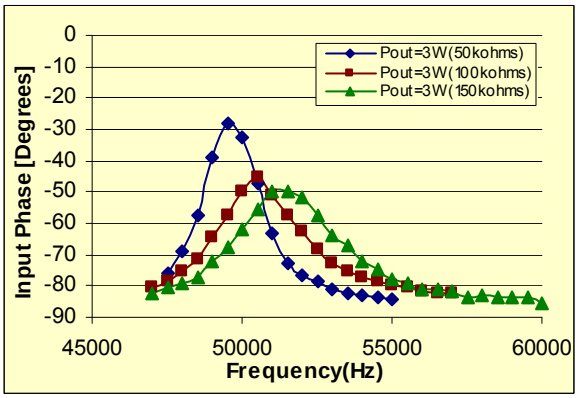


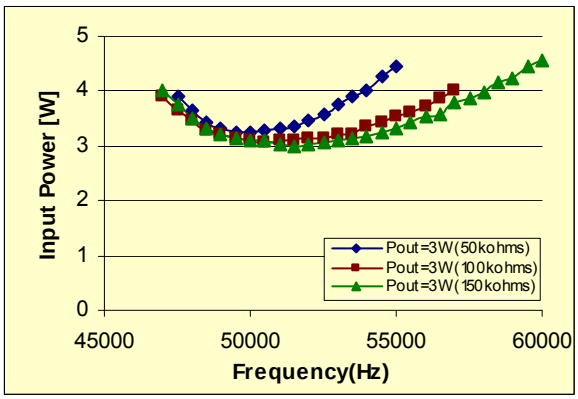


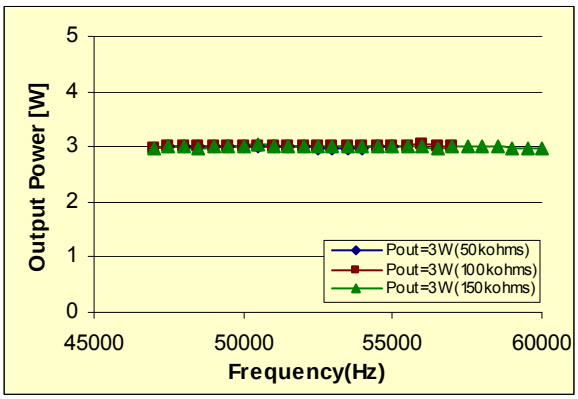












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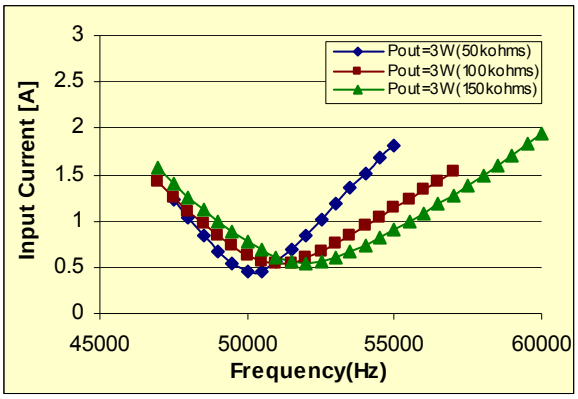
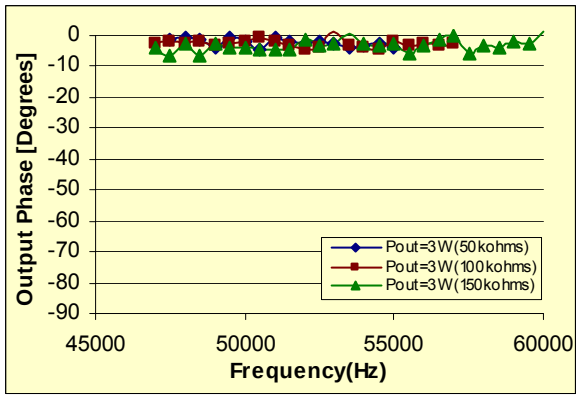
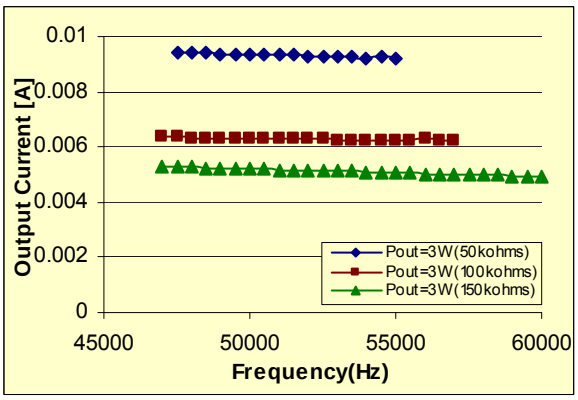
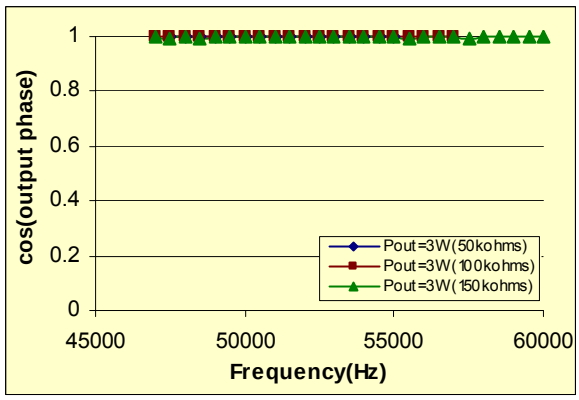
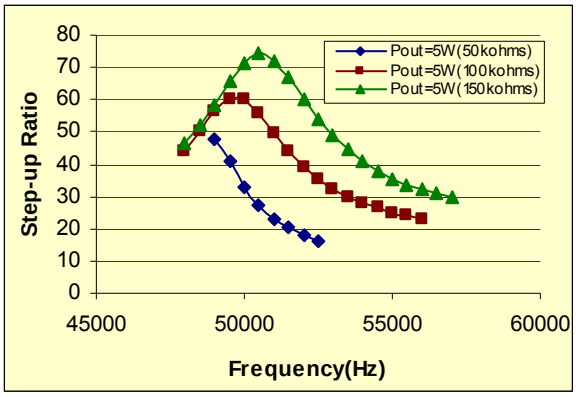


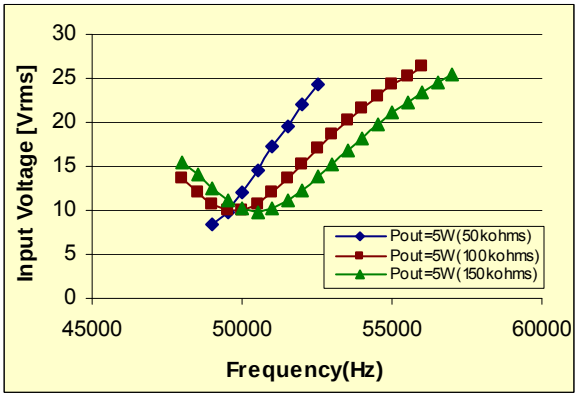


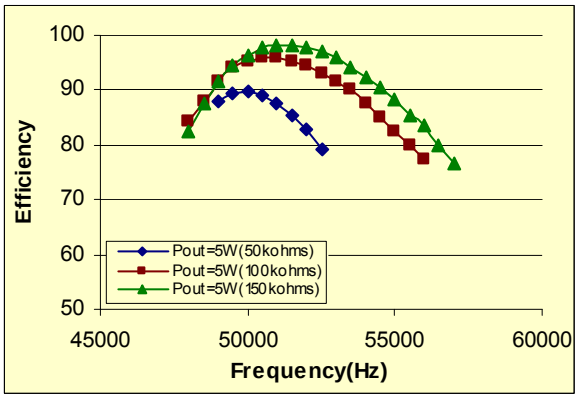


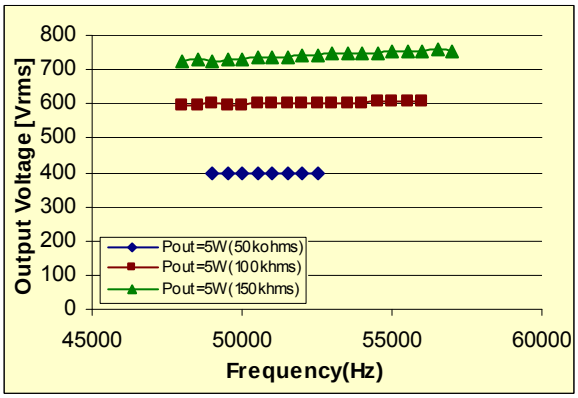


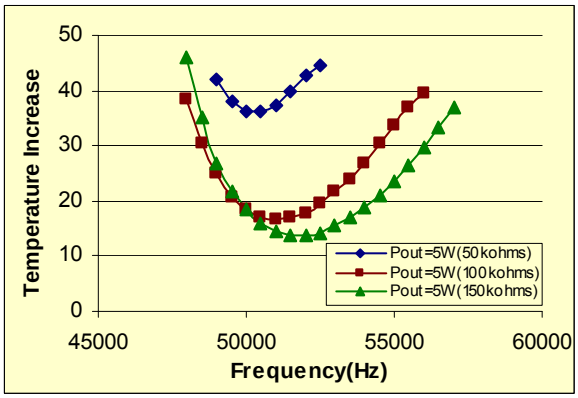
8. Power Tests (P=5W)

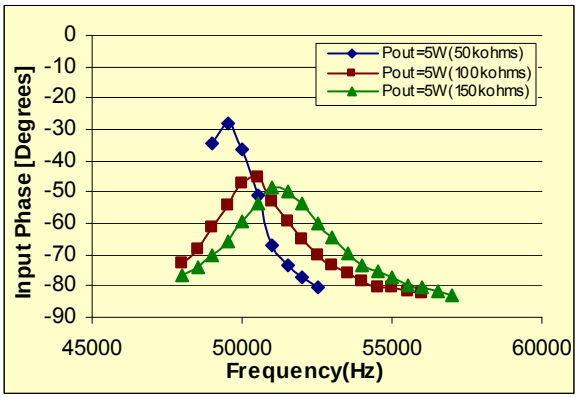


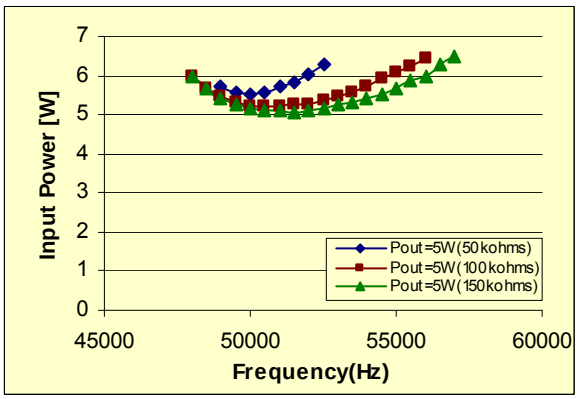


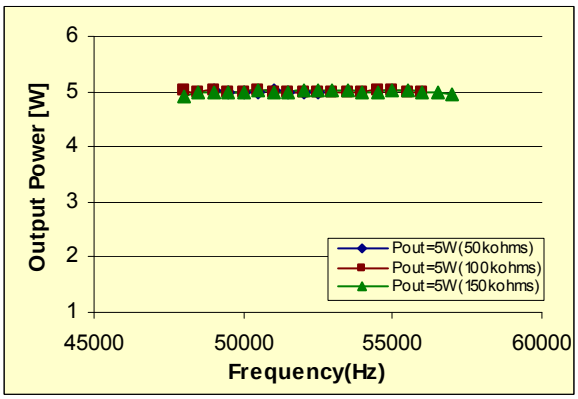












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