Parallel L-C Resonance Frequency

$X_L = 2\pi fL$	$X_C = \frac{1}{2\pi fC}$

$$2\pi fL = \frac{1}{2\pi fC}$$

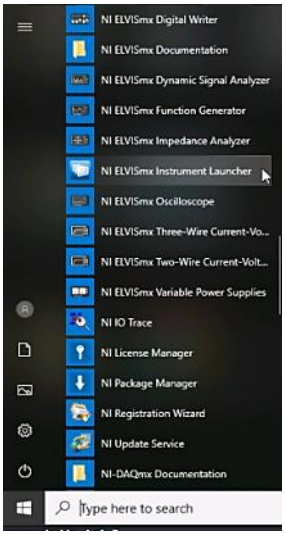
$$f = \frac{1}{2\pi\sqrt{LC}}$$

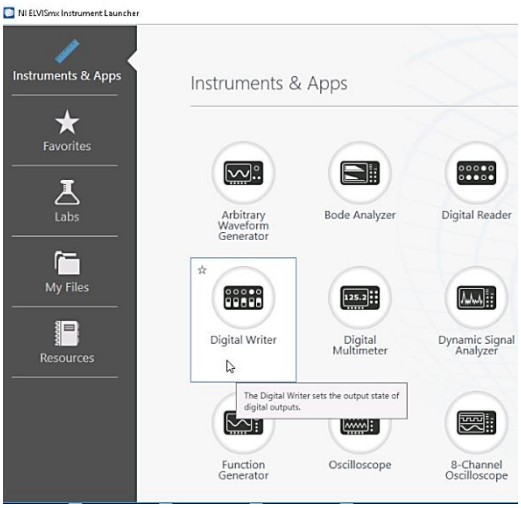
L= 970 uH
C= 3.3 uF
Fr= 2.8 KHz

1. **When reactance of inductor and capacitor are equal to each other than resonance frequency occurs. Please go through theory to understand completely, here we are doing practical to prove it.**

2. **The theoretical resonance frequency and practical resonance frequency varies because of parasitic and stray capacitance as well extra inductance added due to wires and leads on LC Circuit**

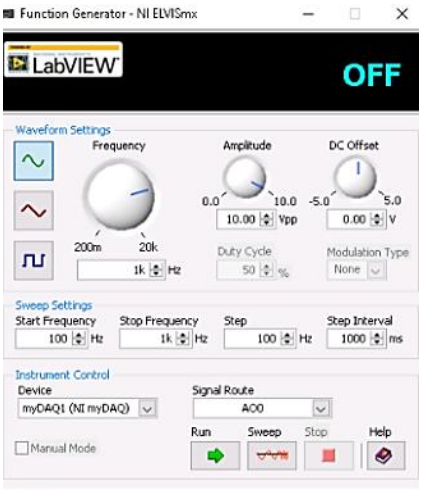
1. Open Electromeet and open "NI ELVISmx" as shown in figure.

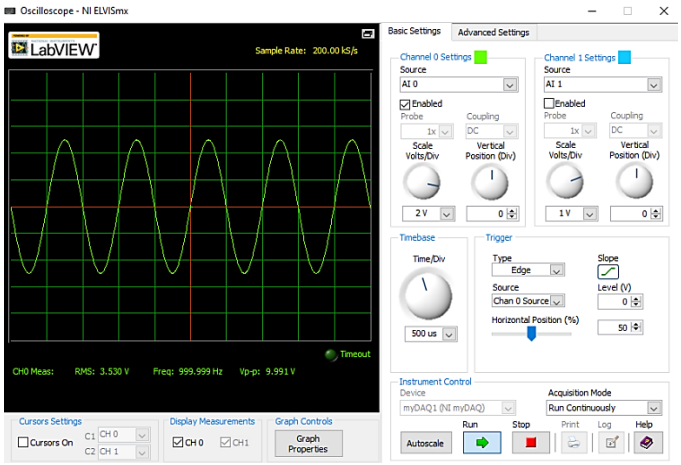




1. National Instrument 2. NI ELVISimx Instrument 3. NI ELVISimx Instrument Launcher

Parallel L-C Resonance Frequency





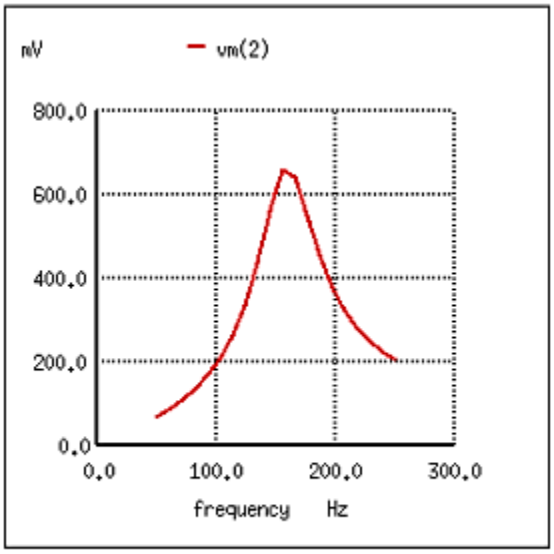
5. Function Generator 1KHz- 5 KHz **6. RMS Voltage variation at different frequency 1KHz- 5 KHz**

Frequency Generator (F)	Voltage (RMS) Across L-C
1.0 KHz	
2.5 KHz	
3.0 KHz	
3.2 KHz	
3.4 KHz	
3.6 KHz	
3.8 KHz	
4.0 KHz	
4.5 KHz	
5.0 KHz	

2 STEPS:

1. **Open NI ELVISmx and then Function Generator and Oscilloscope.**
2. **Vary the frequency from 1 KHz to 5 KHz and calculate the different voltage RMS across L-C and draw the curve voltage across the frequency.**
3. **The maximum voltage drop is considered the resonant frequency which is the maximum impedance.**
4. **The sample voltage graph is included in the diagram below which is not exact with our practical but somewhat the curve will look same like this where the variation of frequency starts from 1 KHz-5 KHz. You can plot not only supplying 10v but also in 8v, 6v,4v in different RMS signal generator**

Parallel L-C Resonance Frequency



Parallel resonant filter: voltage peaks a resonant

Thanks