

# EXPERIMENT #9\_2

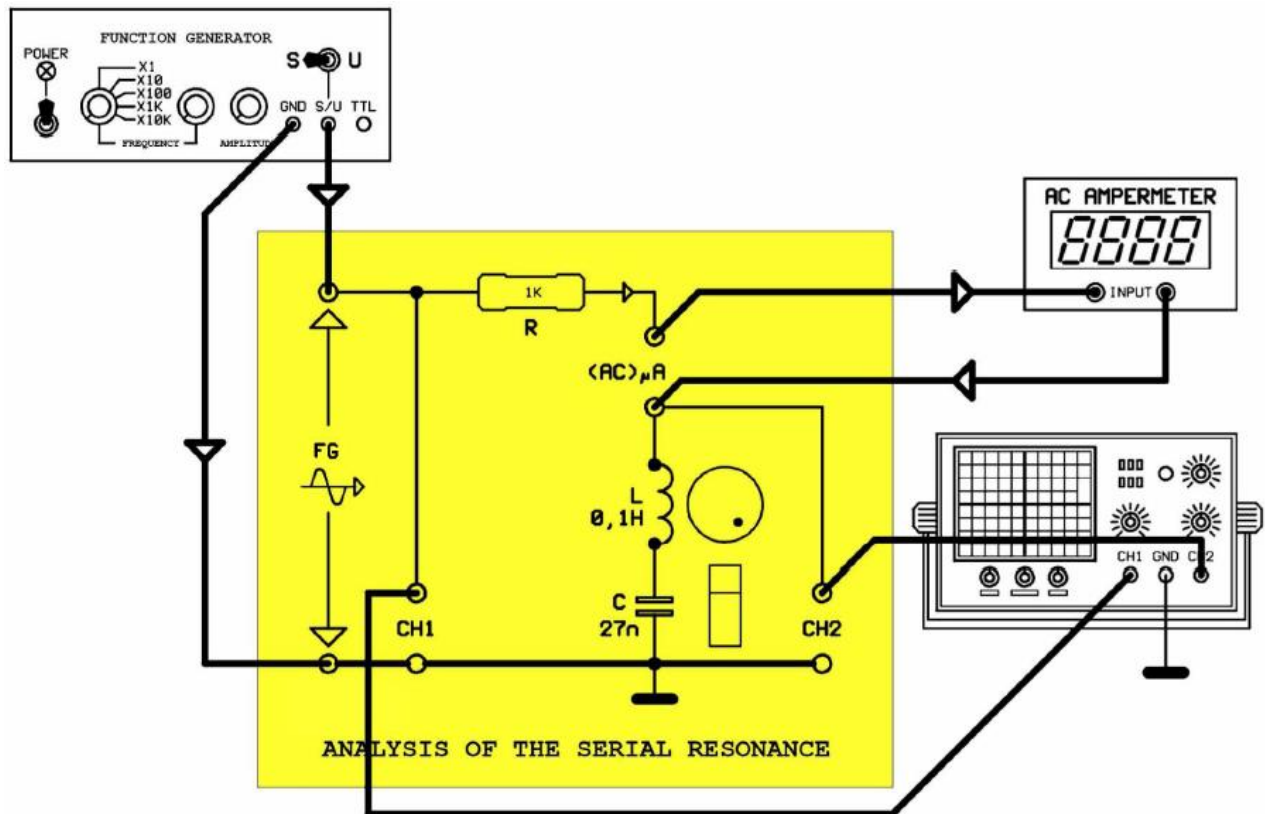
## EXAMINATION OF SERIAL RESONANCE

### REQUIRED MATERIALS:

1. Function generator
2. Oscilloscope (two channels)
3. AC Voltmeter
4. Y-0016/02AC module
5. Connection cable

### EXPERIMENT:

Adjust the frequency commutator of function generator to "X1K". At that position, if the frequency adjustment potentiometer of function generator is switched from minimum to maximum, it will generate signal between **1KHz** and **10KHz**. At any frequency of that position, adjust the peak to peak amplitude of output signal to **V<sub>pp</sub>=10 Volt**. Connect the **Y-0016/02AC** module to its place. Make the circuit connections as in the Figure.



## EXPERIMENT OBSERVATIONS

1. Calculate the resonance frequency of the circuit.

2. Adjust the frequency of function generator to the highest amplitude at CH2 channel of oscilloscope. What is the name of frequency at that moment? Measure that frequency value.?

3. Compare the resonance frequency you calculated and the value you measured..

4. Adjust the frequency between **1KHz-5KHz**, increase it gradually (**0,5 KHz** at every step) while the output signal amplitude of the function generator is constant (**V<sub>pp</sub>=10Volt**).

Write the circuit current of every step to a scale.

<b>FREQUENCY (KHz)</b>	<b>1,0</b>	<b>1,5</b>	<b>2,0</b>	<b>2,5</b>		<b>3,5</b>	<b>4,0</b>	<b>4,5</b>	<b>5,0</b>
<b>CURRENT (<math>\mu</math>A)</b>									

5. What can be said about the resistance, voltage and current variations of parallel resonance circuit looking at the table?



6. Measure the bandwidth of resonance circuit.

