

EXPERIMENT #10_1

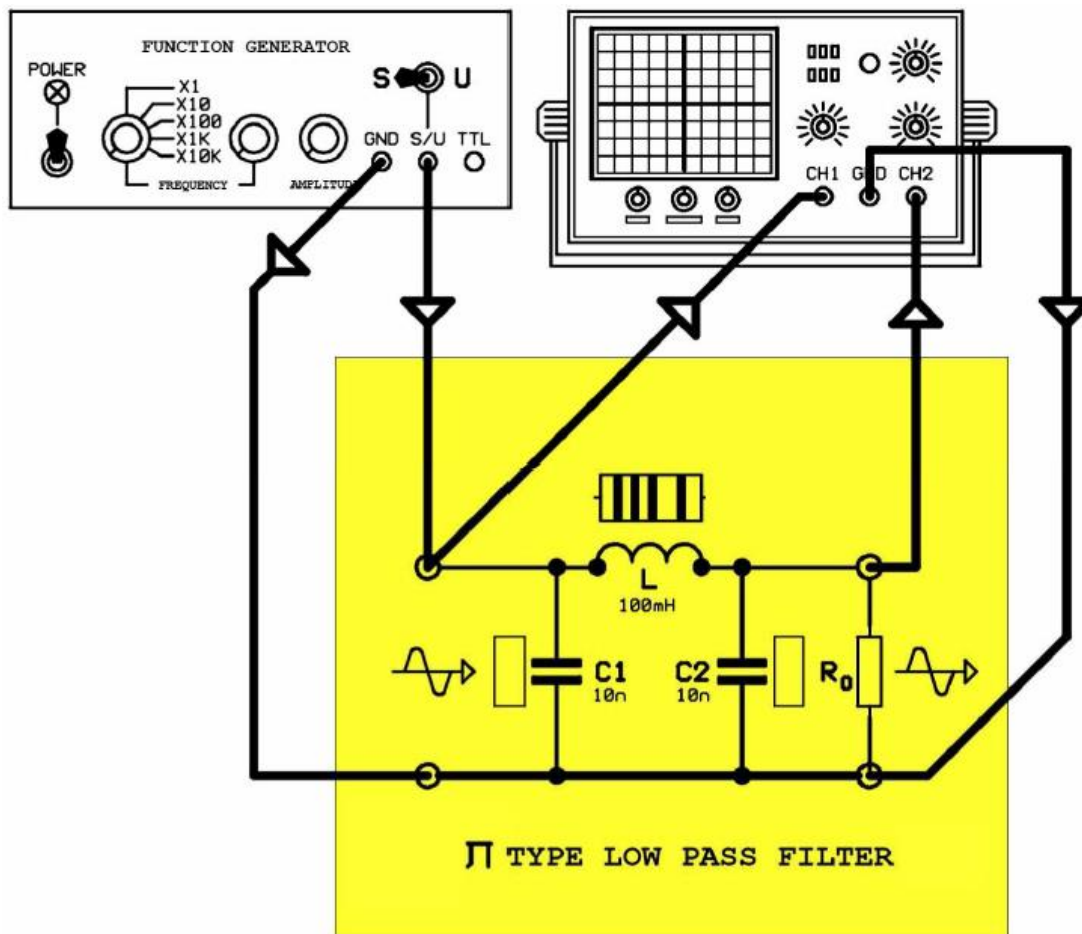
EXAMINATION OF Π TYPE LOW PASS FILTER

REQUIRED MATERIALS:

1. Function generator
2. Oscilloscope (two channels)
3. AC Voltmeter
4. Y-0016/03AC module
5. Connection cable

EXPERIMENT:

Adjust the output of function generator to sine peak to peak $V_{pp}=10\text{ V}$ and the frequency to 1 KHz . Plug the Y-0016/03AC module. Make the circuit connections as in Figure.



EXPERIMENT OBSERVATIONS

1. In the experiment $L=100\text{mH}$, $C=10\text{nf}$. Calculate the " R_o " resistance.

2. Calculate the cut-off frequency of circuit.

3. What does cut-off frequency denote?

4. Apply energy to the circuit. Increase the input signal frequency **1 KHz** each step until **10 KHz**. Note the output signal amplitude to a scale in each step. Especially, measure the output signal amplitude at cut-off frequency.

FREQUENCY (KHz)	V_0 (V_{PP})
1,0	
2,0	
3,0	
3,5	
4,0	
4,5	

FREQUENCY (KHz)	V_0 (V_{PP})
6,0	
7,0	
8,0	
9,0	
10,0	

5. Compare the calculated cut-off frequency and the value you measured. If there is a difference, explain why?

6. What can be said about the change in scale?