Lab 12 – Series/Parallel Inductors

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Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The purpose of this lab is to:

Experiment with series circuits and parallel combinations of inductors.

The following inductors are needed (1 each of the following): 1mH, 2.2mH and 4.7mH

Measure and record the inductance of each inductor using the LCR meter. Connect the inductors as shown in Figure 1 and measure and record the total inductance, LT. Then connect the inductors as shown in Figure 2 and measure and record the total inductance, LT.

Equipment needed:

1 – LCR Meter



Figure 1

**Series Circuit**

1 – Elvis II

3 – Inductors

|  |  |  |  |
| --- | --- | --- | --- |
|  | Expected | Simulated | Measured |
| L1 = | 1 mH | 1 mH | 1.0305 mH |
| L2 = | 2.2 mH | 2.2 mH | 2.1871 mH |
| L3 = | 4.7 mH | 4.7 mH | 4.357 mH |
| LT = | 7.9 mH | 7.9 mH | 7.53 mH |

Expected = value you expect it to be

Simulated = using Multisim

Measured = using LCR Meter

|  |  |  |  |
| --- | --- | --- | --- |
|  | Expected | Simulated | Measured |
| L1 = | 1 mH | 1 mH | 1.0305 mH |
| L2 = | 2.2 mH | 2.2 mH | 2.1871 mH |
| L3 = | 4.7 mH | 4.7 mH | 4.357 mH |
| LT = | 0.599mH | 0.599 mH | 0.5287 mH |

Expected = value you expect it to be

Simulated = using Multisim

Measured = using LCR Meter



Figure 2

**Parallel Circuit**

Observations:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_