Lab 2 – Reading and Sorting Resistors

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Date: 9/11/15

The purpose of this lab is to:

Learn the resistor color code using 15 resistors which must be sorted from smallest to largest value. Build a resistor kit that includes 15 resistors and, sort resistors based on color code from smallest to largest and measure the resistance of each resistor and verify sorting

Equipment needed:

1 – Digital Multimeter

1 – 15 unique resistors

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|  | **Color Code** | **Measured  Value** |
| 100 = | Brown, Black, Brown, Gold | 98.90 |
| 220 = | Red, Red, Brown, Gold | 216.23 |
| 330 = | Orange, Orange, Brown, Gold | 324.48 |
| 470 = | Yellow, Violet, Brown, Gold | 460.14 |
| 1K = | Brown, Black, Red, Gold | 0.979 k |
| 2.2K = | Red, Red, Red, Gold | 2.163 k |
| 3.3K = | Orange, Orange, Red, Gold | 3.249 k |
| 4.7K = | Yellow, Violet, Red, Gold | 4.620 k |
| 10K = | Brown, Black, Orange, Gold | 9.779 k |
| 22K = | Red, Red, Orange, Gold | 21.458 k |
| 33K = | Orange, Orange, Orange, Gold | 32.833 k |
| 47K = | Yellow, Violet, Orange, Gold | 47.177 k |
| 100K = | Brown, Black, Yellow, Gold | 991.8 k |
| 1M = | Brown, Black, Green, Gold | 1.0033 M |
| 10M = | Brown, Black, Blue, Gold | 10.329 M |

Observations: After we gathered all of the resistors we learned how to distinguish the resistance value of each resistor by looking at their color codes. We observed, yet again, that the values are not exactly correct. It should not matter as long as the value falls within the accepted percent error of that individual resistor, which is determined by the final color of the resistor.