Lab 1 –Resistor Variability

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| **Sample** | **Measured  Value** |
| 1 | 0.9827 |
| 2 | 0.9815 |
| 3 | 0.9786 |
| 4 | 0.9802 |
| 5 | 0.9676 |
| 6 | 0.9873 |
| 7 | 0.982 |
| 8 | 0.9748 |
| 9 | 0.9792 |
| 10 | 0.9808 |
| 11 | 0.9972 |
| 12 | 0.9995 |
| 13 | 0.9861 |
| 14 | 0.9842 |
| 15 | 0.9964 |
| 16 | 0.9918 |
| 17 | 0.9969 |
| 18 | 0.9861 |
| 19 | 0.9816 |
| 20 | 0.981 |

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The purpose of this lab is to:

Learn the how resistors vary using 20 resistors with the same color code.

Select a set of 20, 1 kohm resistors.

Measure and record the resistance of each resistor.

Equipment needed:

1 – Digital Multimeter

1 – 20 resistors with the same color code.

Resistor color code = ­­­­­­­­­­­­­­­Brown, black, red, gold

Resistor value = 1KΩ

Resistor tolerance = 5%

Using Microsoft Excel plot the resistor values and determine:

Smallest resistance = ­­­­­­­­­­­­­­ 0.9676kΩ

Largest resistance = 0.9995kΩ

Average resistance = 0.984775kΩ

Standard Deviation = 0.007938569kΩ

Do any of your resistor values exceed the part tolerance? No

Observations: All the resistors were below the nominal resistance value. It was surprising that none of the resistors were at least 1kΩ.