REPORT 1
INDEPENDENT PROJECT
EE1025

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Abstract

In this experiment we are going to read explore about the resistors color coding , how to use multimeter ,Regulated DC Power Supply,Digital storage oscilloscope ,5 MHZ function generator.inductance ,charging of capacitor.

1 Introduction

The very important physical effect has applications in modern world.

2 Procedures

•A Multimeter or a Multitester, also known as a VOM (volt-ohm-milliammeter), is an electronic measuring instrument that combines several measurement functions in one unit.
•A typical multimeter can measure voltage, current, and resistance.

Measurement of :

- AC Voltage(R.M.S Voltage)
- AC current
- DC voltage
- DC current
- Resistance

Procedures of regulated dc supply

- Low Cost General Purpose Laboratory Bench Unit
- Three Independent Outputs Electrically Isolated from Each Other.
- Electrically Floating Outputs up to 500V DC w.r.t. ground.
- Voltage ranges are 4.5-5.5V,12-15V as shown in figure which can be used to create upto 32V.
- We can also control current limit using coarse and fine in the figure.

Procedures of 5 MHZ function generator

Types of functions that can be generated:

- Triangular function
- Sine function
- Square function

• constant function

The functions are all periodics whose frequency can be adjusted w.r.t 5MHz.

How does a digital oscilloscope operate

• It will detect the signal and sketch it on the screen .

• Both DC and AC signal can be operated here .

• We can also get information about signal such as frequency, amplitude.

• We can also compare two signals .

• We can adjust x- axis,y-axis and a lot of other applications.

3 Measurement of Resistance(Analysis)

Resistor	Color code	Color code resistance	Actual resistance
1	Br G B Y S	1.5M	1.5M
2	R V B B Br	270	270.6
3	Y V B Br Br	4.7K	4.68K
4	R R B R Br	22K	21.94K
5	Br G B Br Br	1.5K	1.5K
6	Y V B B Br	0.47K	0.47K
7(Defective)	R R S S	0.22	200M
8	Y V B Br Gr	4.7K	4.61K
9	R R B Y Br	2.2M	2.23M
10	Y V B R Br	47K	47.2K

Here we have used multimeter to measure actual resistance

4 Inductance and capacitance.

We are given and inductor and a capacitor.
Inductor:
color code R R R S.
Inductance

$$L = (2.2K \pm 10\%)H \tag{1}$$

Capacitance:
We are given a 25V ,$100\mu F$ *capacitor and charged it to* $8V$
which happened in just span of seconds for a $10K$ *resistor.i.e before time constant* $T = 1s$

5 Conclusions

Conclusions
• for resistance measurement we have all resistor matching color code resistance with the actual resistance except for one.
• we have also learned how to use dc voltage power supply
• we have also learned how to generate signals of different types of functions.
• we have also learned how to sketch and understand signals using oscilloscope.