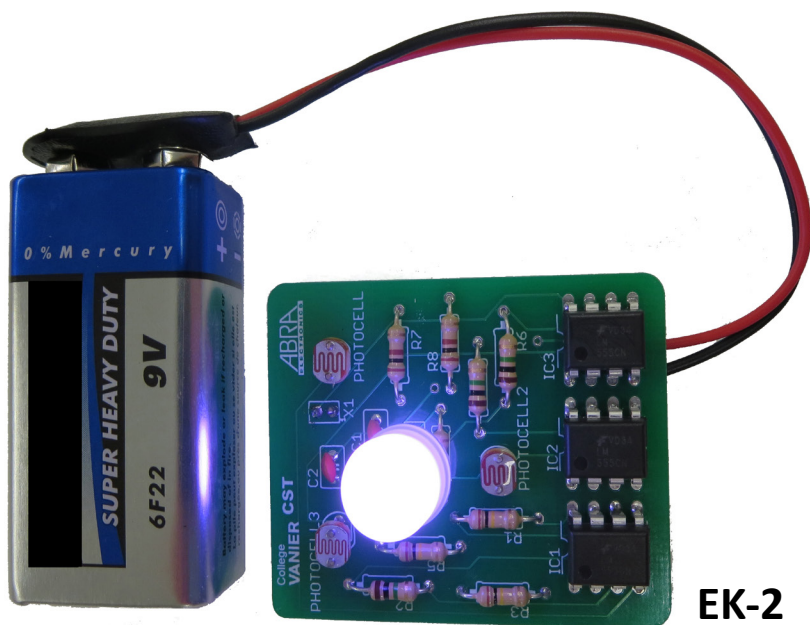


ABRA

COLOR MOOD KIT

See What Color Your Mood Is In



EK-2

- Uses 10mm RGB LEDs
- Three Photocells control red, green, and blue
- Moving hand over photocells shows color mood changes



COLOR MOOD KIT

ABRA ELECTRONICS

Designed by Andre /Vanier College

Overview

The COLOR MOOD KIT uses a 10mm RGB LED to produce a multicolored effect in the presence of nearby people. Three photocells control the Red, Green, and Blue intensity of the LED when a hand is held over the LED.

The kit is suitable for beginners, even if you have never soldered before. You can find soldering instructions on the ABRA website under SOLDER-KIT.

Soldering is made easier on a high quality printed circuit board with solder mask on both sides to prevent solder shorts and a clear silk screened parts layout to identify where the parts are to be inserted.

***Warning:** Soldering can expose the user to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Tools Required

- Pencil type soldering iron
- Solder
- Diagonal Cutters

Parts List

QTY	PCB#	Item	Description	ABRA #
1	N/A	Printed Circuit Board	Color Mood PCB	BRD-COLOR
3	C1, C2, C3	Capacitor	0.1 uF Ceramic Capacitor	CD104
1	X1	Connector, Battery	9 Volt Battery Clip Connector	29-130
3	IC1, IC2, IC3	IC	CMOS 555 Timer	LM555
1	N/A	LED	10mm RGB LED	LED-10RGB-4
3	PH1, PH2, PH3	Photocell	5mm Photocell 5k Light 200m Dark	PHOTO-340
3	R7, R8, R9	Resistor	¼ Watt Resistor 100 OHM (Brown, Black, Brown)	R1/4-100
3	R1, R3, R5	Resistor	¼ Watt Resistor 100k OHM (Brown, Black, Yellow)	R1/4-100K
3	R2, R4, R6	Resistor	¼ Watt Resistor 1M OHM (Brown, Black, Green)	R1/4-1M

Assembly Instructions

1. Install and solder R1, R3, and R5 (100K) resistors as per fig.1.
Trim leads with diagonal cutter.

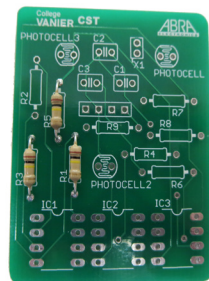


Fig.1

2. Install and solder R2, R4 and R6 (1M) resistors as per fig. 2.
Trim leads with diagonal cutter.

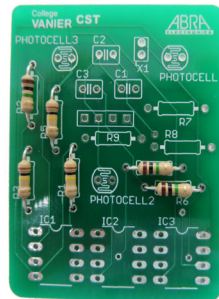


Fig.2

3. Install and solder R7, R8 and R9 (100) resistors as per fig.3.
Trim leads with diagonal cutter.

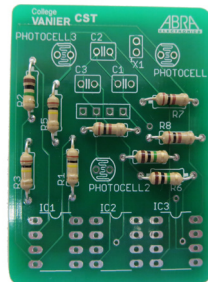


Fig.3

4. Install and solder capacitors C1, C2 and C3 (0.1uf) as per fig.4.
The leads can be inserted in either direction.
Trim leads with diagonal cutter.

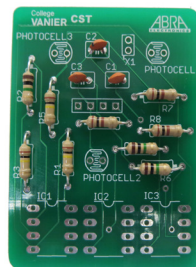


Fig.4

5. Install and solder IC1, IC2 and IC3 (LM555) as per fig. 5.
Make sure pin1 (the dot) is facing towards the LED as shown in fig.5.

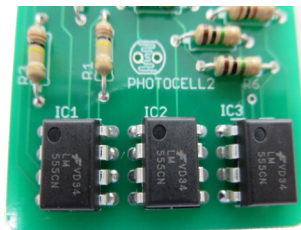


Fig.5

Assembly Instructions

6. Install Photocell 1, 2 and 3 (Photo340) as per fig.6.

The leads can be inserted in either direction.

Trim leads with diagonal cutter.

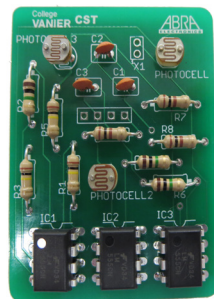


Fig.6

7. Install the LED as shown in fig. 7.

Make sure the long lead is inserted as shown.

Trim leads with diagonal cutter.

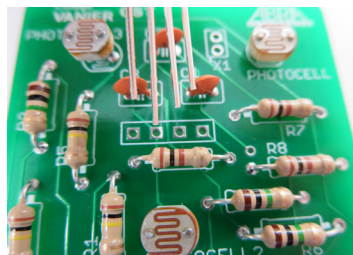


Fig.7

8. Solder the black wire lead of the 9V battery connector from the back side of the PCB into pin 1 of the X1 as per fig.8.

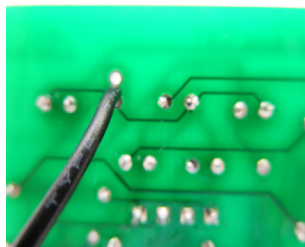


Fig.8

9. Solder the red wire of the 9V battery connector from the back side of the PCB into the other pin of X1 as per fig. 9.

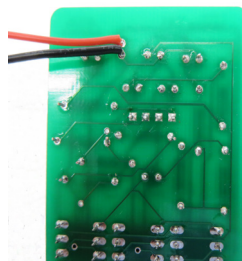


Fig.9

10. Install a 9 Volt battery as shown in fig.10.

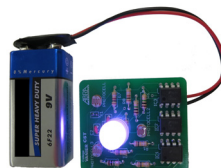


Fig.10

Operation

To see the color mood changes move your hand over the photocells.