

ABRA

Theremin Player Kit



EK-1

Produce fun sounds depending
on closeness of fingers to photocell
sensor.



ABRA

Theremin Player Kit

ABRA Electronics

Designed by Andre / Vanier College

Overview

The THEREMIN PLAYER KIT produces fun squawk box sound effects. Sounds change depending on the closeness of hands or fingers to the photocell sensor.

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.

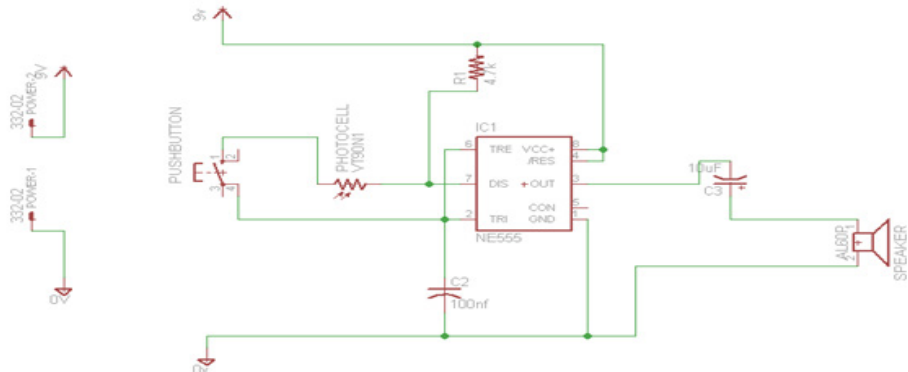
Soldering is made easier on a high quality printed circuit board with solder mask on both sides to prevent solder shorts and a clear silk screened parts layout to identify where the parts are to be inserted.

Tools Required

- Pencil type soldering iron
- Solder
- Diagonal Cutters

Parts List

QTY	PCB#	Item	Description	ABRA #
1	N/A	Printed Circuit Board	Theremin Sound PCB	BRD-THEREMIN
1	C1	Capacitor	10UF 16V Electrolytic Capacitor	CD104
1	C2	Capacitor	0.1 UF Ceramic Capacitor (104 CODE)	10R16
1	N/A	Connector, Battery	9 Volt Battery Clip Connector	29-130
3	IC2	IC	CMOS 555 Timer	LM555
1	Pushbutton	Pushbutton	MOM. Pushbutton	PBS-175
1	Photocell	Photocell	5mm Photocell 5k Light 200m Dark	PHOTO-340
1	R1	Resistor	¼ Watt Resistor 4.7k OHM (Yellow, Violet, Red)	R1/4-4.7K
2	Speaker	Jumper Wire	4 Inch Jumper Wires for Speaker	JW-75-4
1	Speaker	Speaker	8 OHM 0.5W 2 Inch Speaker	SPK-120



Assembly Instructions

1. Install and solder IC1 (LM555) as per fig. 1.
Make sure pin1 (the dot) is facing towards the PHOTOCELL as shown in fig.1.

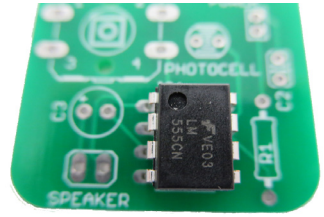


Fig.1

2. Install and solder photocell (Photo340) as per fig.2.
The leads can be inserted in either direction.
Trim leads with diagonal cutter.

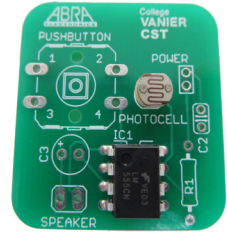


Fig.2

3. Install and solder capacitor C2 (0.1uf) as per fig.3.
Trim leads with diagonal cutter.
The leads can be inserted either way.



Fig.3

4. Install and solder R1 (4.7K) resistors as per fig.4.
Trim leads with diagonal cutter.



Fig.4

5. Install and solder the pushbutton as shown in fig. 5.



Fig.5

Assembly Instructions

6. Install and solder capacitor C1 (10uf) as shown in fig.6.
Make sure the minus (-) lead is facing towards IC1.

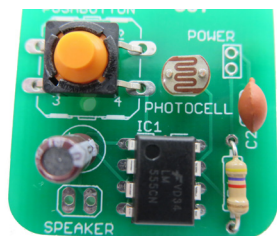


Fig.6

7. Insert the black wire lead of the 9V battery connector through the upper hole on the pushbutton and solder it to pin 1 (dot) of IC1 as per fig.7.

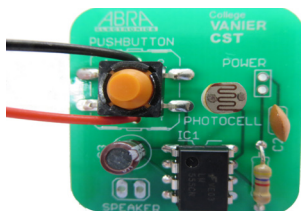


Fig.7

8. Insert the red wire lead of the 9V battery connector through the lower hole on the pushbutton and solder it to pin 4 of IC1 as per fig.8.

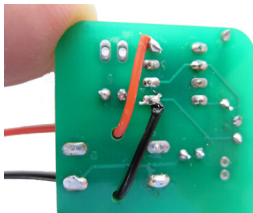


Fig.8

9. Solder one end the two jumper wires to the SPEAKER terminals on the PCB as per fig.9.



Fig.9

10. Plug the other end of the two jumper wires into the speaker connector as shown in fig. 10.

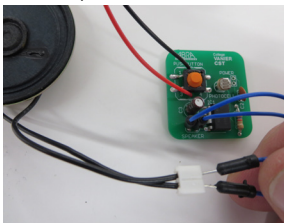


Fig.10

11. Install a 9 Volt battery as shown in fig. 11.



Fig.11

Operation

To activate the sound effects, hold the pushbutton down while moving a finger closer and further away from the photocell.

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