

**SPACE GUN 3 TONE**  
CODE 272

LEVEL 1

This space gun circuit is the tone generator circuit. It has 3 tones difference that is similar to a movie. Ideal for model construction, toy, sound effect for the movie, etc.

**Technical specifications:**

- power supply: 9V batteries (not incl.)
- consumption: 30mA max.
- dimensions: 2.61 x 1.36 inches

**How to works:**

TR4 and TR5 is configured as the low frequency generator circuit for control the high frequency generator. At the emitter of TR4 is connected in series with switch (SW1, SW2, SW3) and capacitor (C3, C4, C5). All switch is used for select the tone of the high frequency. TR2 and TR3 is configured as the high frequency generator circuit which control by the low frequency generator. Both frequency is fed to the base of TR1 for amplify the frequency and drive to a small loudspeaker.

**PCB assembly:**

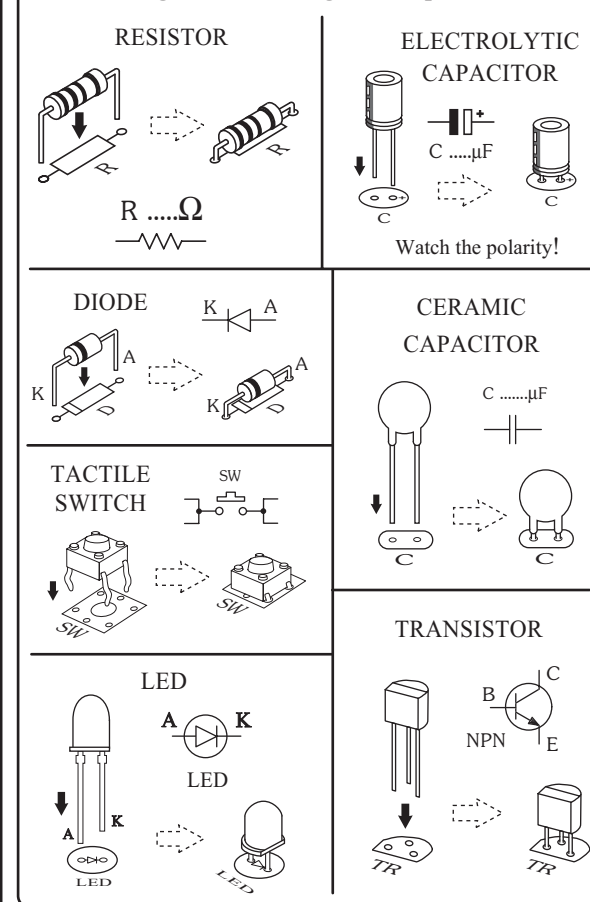
Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. Some components are particularly sensitive to heat (ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads will help conduct heat away. Trim components leads with wire cutters to prevent excess lengths causing a short circuit.

Now check that you really did mount them all the right way round!

**Testing:**

This kit has an operating voltage range of 9 VDC. Apply power supply. Push some switch, you will hear the sound from speaker. And then push the other switch, you will hear the difference sound to first time. At the same time, LED is flashing simultaneous with sound.

Figure 1. Installing the components



**Troubleshooting:**

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

Figure 2. Space gun 3 tone circuit

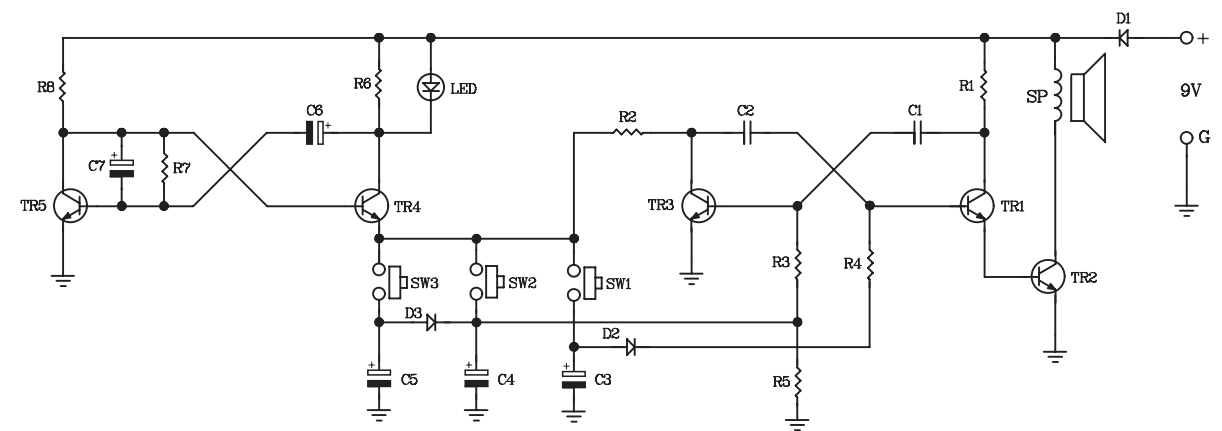
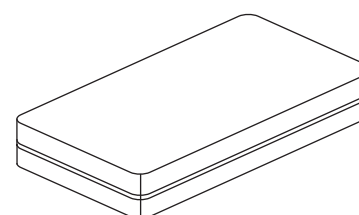
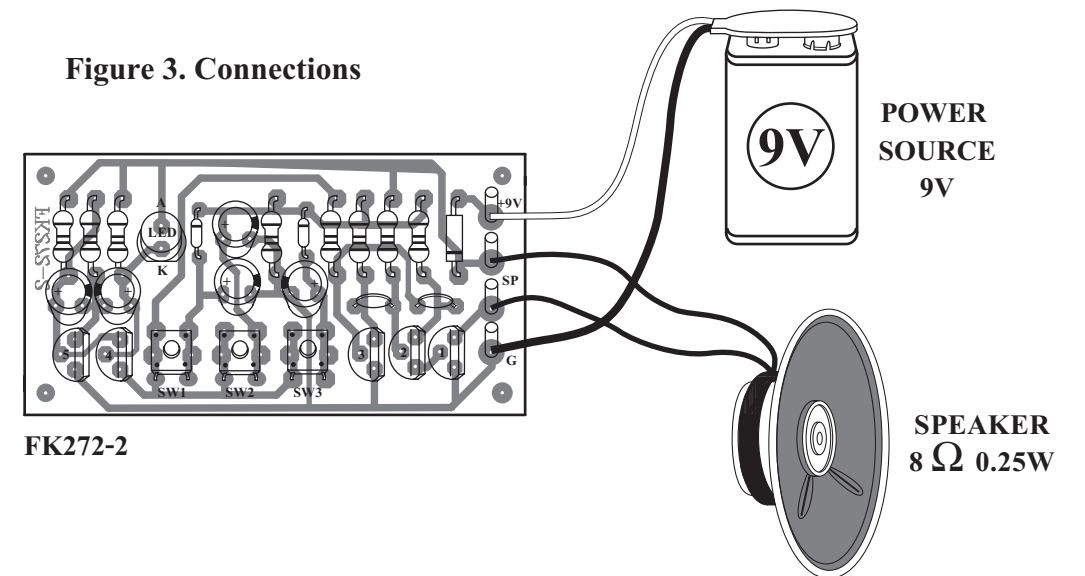


Figure 3. Connections



**NOTE:**  
FUTURE BOX FB17 is suitable for this kit.

NEW KIT SET

CODE FK	DESCRIPTION	POWER
156	MINI TRAFFIC LIGHT 3 LED	9-12VDC
157	TWO WAY CHASING LIGHT TWO COLOUR 10 LED	9-12VDC
158	STROBOSCOPE 220V	220VAC
159	SHAKING DICE	9-12VDC
160	RANDOM NUMBER GAME 1 DIGIT	9-12VDC
273	MUSIC DOOR (WITH MAGNATIC SWITCH)	3VDC
274	MINI ORGAN 13 TONE (WITH MAGNATIC SWITCH)	9VDC
325	RINGING SIGNAL LIGHT 5 LED	NONE
672	MINI MEGAPHONE (WITH SPEAKER)	4.5-12VDC