

TELEPHONE R.F. TRANSMITTER
CODE 320 **LEVEL 1**

The telephone radio frequency transmitter circuit is applied to intercept a telephone conversation throughout FM radio at the frequency of 90 MHz.

Technical specifications:

- no need power supply
- transmitting frequency: approx. 90 MHz (adj.)
- this circuit is connected series with the telephone line.
- PCB dimensions : 1.92 x 1.09 inches.

How to works:

TR1 is connected to be an oscillator related to L2 and T1 which are available for the adjustment of frequency generation. R3 and C2 receive the signal frequency transmitted through the telephone line and mixed it up with one oscillated by TR1. After that the frequency is transmitted through C5 coupling out an antenna to L1 which functions to prevent the oscillation from the frequency troubling. R1, R2 and LED are connected to be a circuit load. VR1 is available for the adjustment of voltage in order to remove the current coming in a telephone.

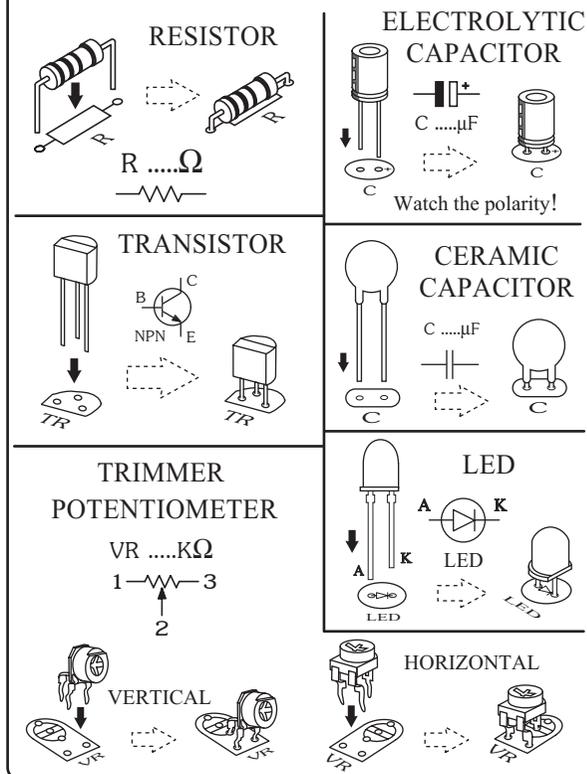
PCB assembly:

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:

Install all component following figure 3. Adjust the trimmer potentiometer max. counter-clockwise and pick up the receiver. LED therefore lights if not, reverse the line to connect a "TEL" point. Adjust the FM radio volume approximately at 90 MHz. Use a plastic screw to adjust T1 trimmer capacitor until there is interference throughout the radio. Talk to the receiver and the sound will be heard. If the voice is not clear, gradually adjust T1 trimmer capacitor till it is clear. VR1 is available for some model of telephone that cannot call out or receive a call by turning L. Adjust VR1 slightly to the middle and then adjust T1 again.

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.

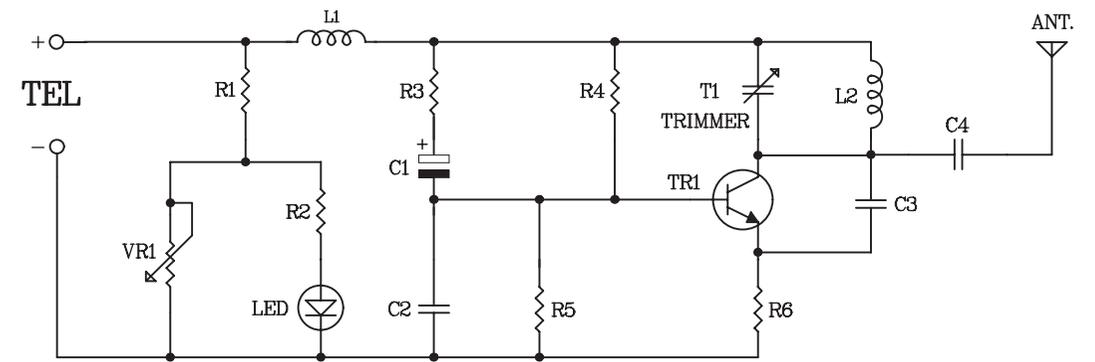


Figure 2. The telephone R.F. transmitter circuit

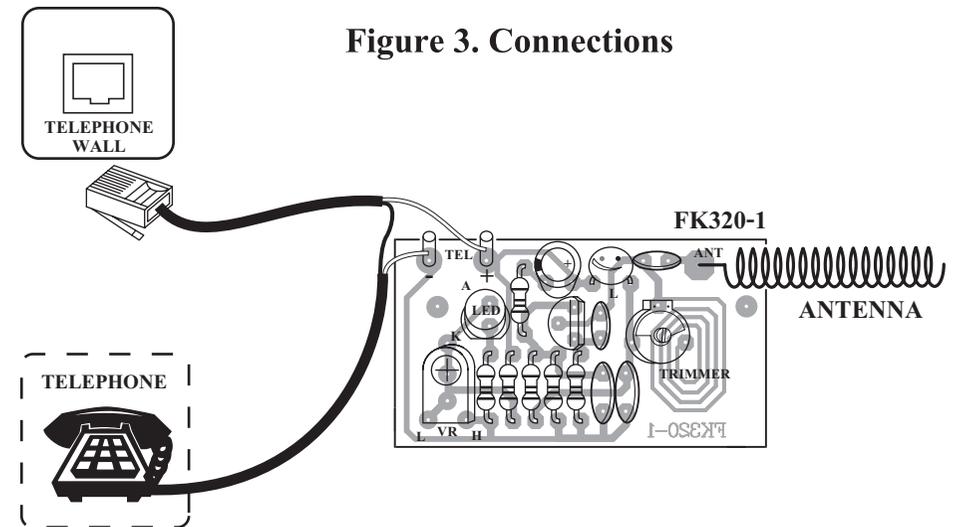
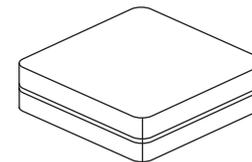


Figure 3. Connections



NOTE:

FUTURE BOX FB01 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