

FM SIMPLIFY TUNER 88-108 MHz

CODE 707

LEVEL 1

Tuner is radio receiver that receives signal from radio station sent signal to out. This tuner circuit is a mini radio receiver.

**Technical specifications:**

- power supply : 4.5-9VDC.
- consumption : 10mA. max.
- PCB dimensions : 2.38 x 1.68 inches.

**How to works:**

This circuit has only few components. It requires IC no. IC1 as an IC to receive FM radio wave. There are only few external componants so that this tuner is small. IC composes of local-oscillator mixer, IF amplifier, quadrature, detector, muting. As per figure shown, antenna frequency radio signal or ANT will pass C1 to band pass filter circuit L1 to pin 13 and 14 of IC2. C2 is coupling C5. C10 acts as filter to amplifier and demodulator circuits. Pin 6 of IC1 is the tuner which C11, L2 and VC will adjust and tune required radio station. Pin 16 connected to receive negative voltage while pin 5 does for positive voltage by passing through R1. C3 acts as filter. C4 bypass high frequency to ground. Pin 2 is OUTPUT R2 and C12 is de-emphasis for sound signal through C13 to VR1. VR1 adjusts volume through C15 to OUTPUT in order to connect with amplifier circuit further.

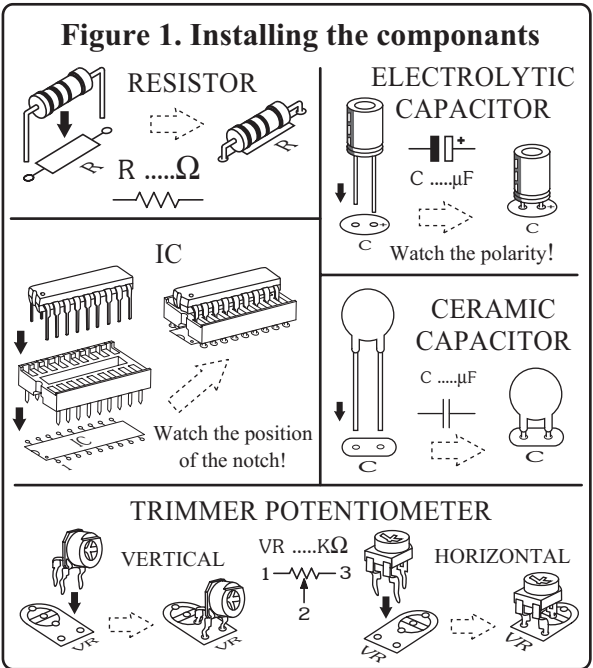
**PCB assembly:**

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:**

Connecting OUT with amplifier by connecting with IN of amplifier. Giving 4.5 to 9 volts supply to the circuit. Adjusting VR1 to maximum and turning amplifier volume to connect. There should be a sound at speaker. Adjusting variable, there should be many radio wave signals. Comparing the maximum signal with radio, if tuner cannot receive the signal, turning trimmer at G till maximum signal received.



**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.

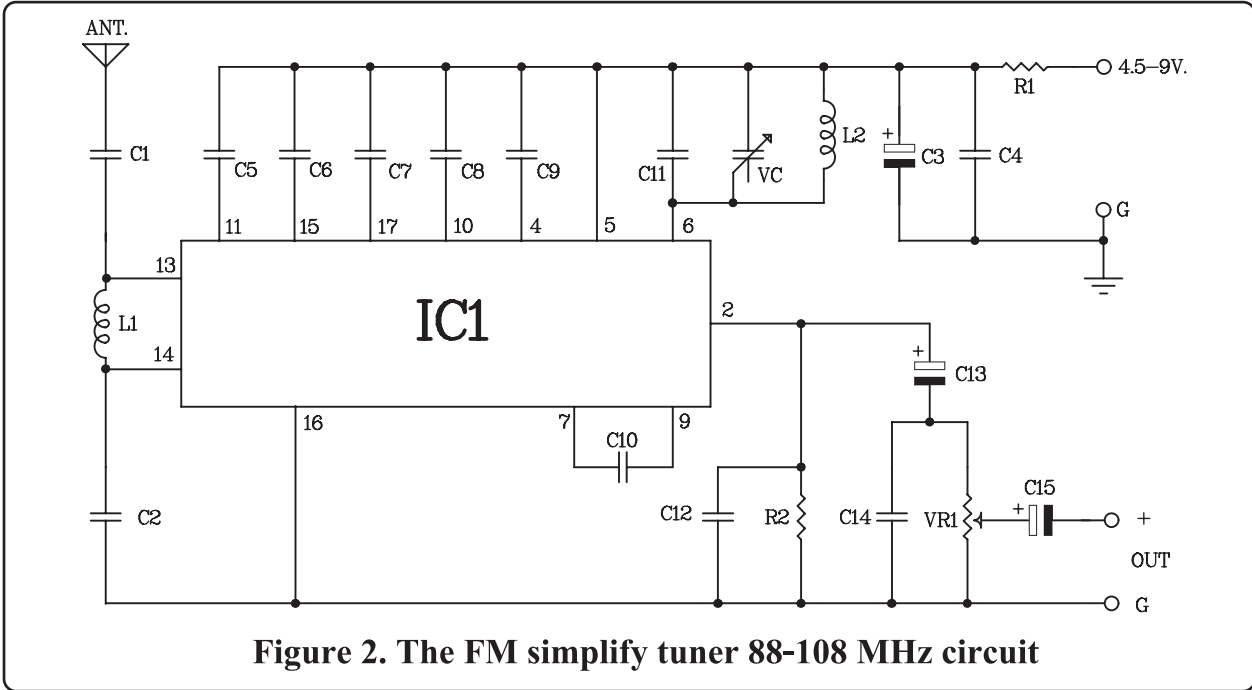
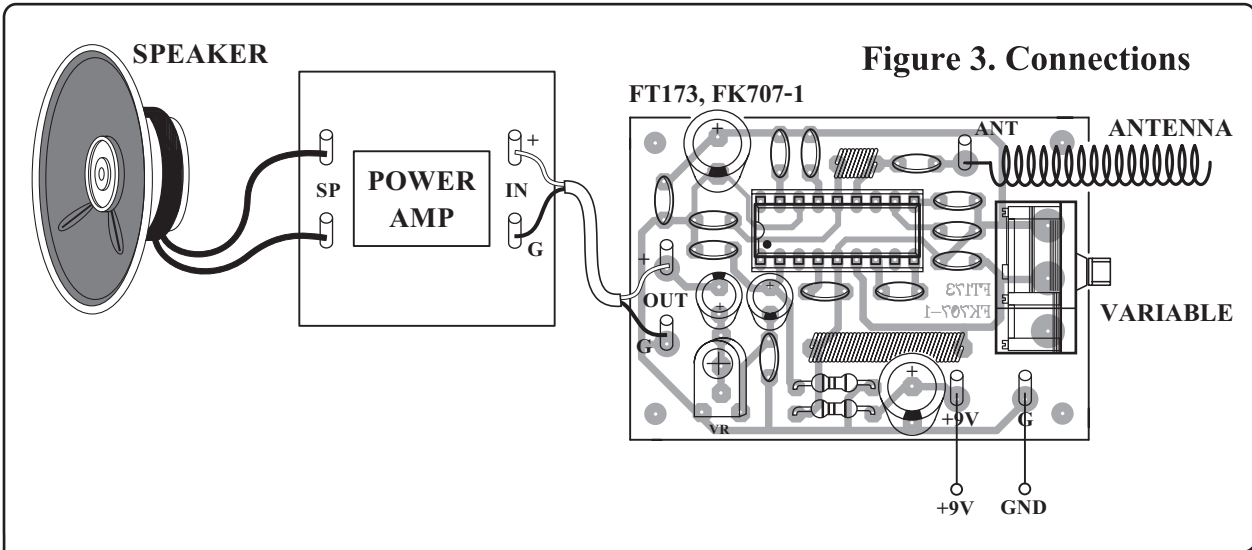
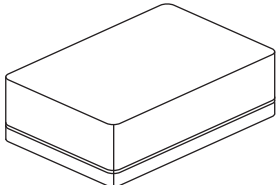


Figure 2. The FM simplify tuner 88-108 MHz circuit





**NOTE:**

FUTURE BOX FB03 is suitable for this kit.

NEW KIT SET

CODE FK	DESCRIPTION	POWER
167	FIREFLY LIGHT (NIGHT ACTIVATE)	3VDC
275	THREE TRAIN SOUNDS (IC DIGITAL)	3VDC
276	OWL VOICE (IC DIGITAL)	3VDC
326	DUAL STATION INTERCOM&DOOR BELL (WITH 2 SPEAKER)	6-12VDC
436	UHF REMOTE CONTROL 1 CH.	TX. 9VDC RX. 12VDC
673	MINI POWER AMP 1+1W. STEREO	3-12VDC