# FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

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## STEREO SIMULATOR
## CODE 651

LEVEL 2

The stereo simulator circuit divides the different frequency to left and right side. The left allows the frequency at 64Hz, 1KHz and 4KHz. The right lets the frequency at 32Hz, 500Hz and 2KHz to go through. Therefore it sounds like stereo.

**Specification:**

- Supply voltage : 12 VDC
- Consumption : 5mA.max
- Dimension : 2.67 x 2.71 inches.

**How it works:**

The input signal is transmittedthrough C1 and R3 to the base of TR1 which function as a buffer, to be double amplified and then transmitted through C2 to divider section L. IC1/1 lets the frequency at 64Hz to go through, IC1/2 lets that at 1KHz to go through and IC1/3 lets that at 4KHz to go through. The three signals will be transmitted to IC1/4 to be amplified. Then C3 coupling the signal throughout L spot. R IC2/1 lets the frequency at 32Hz to go through, IC2/2 lets that at 500Hz to go through and IC2/3 lets that at 2KHz to go through. The three signals will be transmitted to IC2/4 to be amplified. After that C17 coupling the signal throughout R spot. R11 and R12 are connected to distribute the half current from the power supply to non-inverting terminal of six opamps.

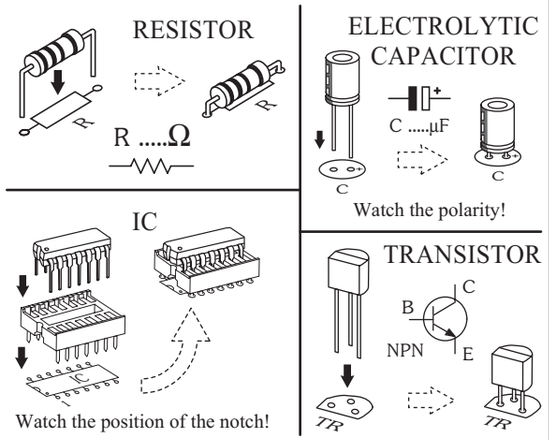
**PCB assembly:**

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:**

Connect tone-control as illustrated figure circuit. If do not have tone-control, connect OUT, L and R to IN spot of POWER AMP both L and R. Connect INPUT spot to the tape player or radio that is monotone. Connect the circuit with a television set, a headphone spot must be available. A video can be connected AUDIO OUT spot. Adjust the amplified rate by decrease R8 at L and R28 at R which their value is at 470K. The less value is less amplify.

**Figure 1. Installing the componants**




**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.

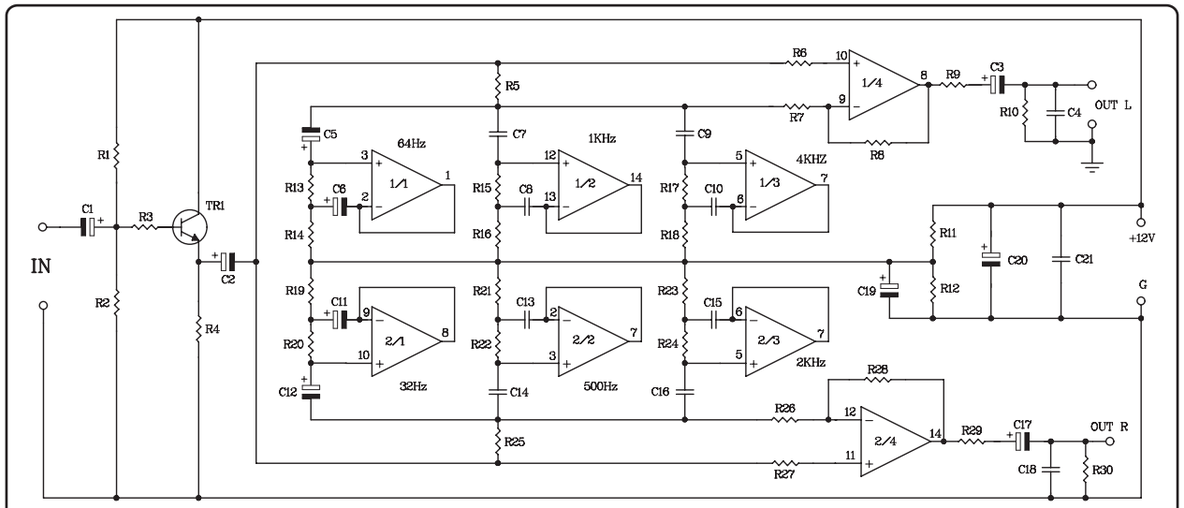



**Figure 2. The stereo simulator (mono in/stereo out) circuit**

**Figure 3. Connections**