

MAXX TRONIC

THE QUALITY ELECTRONIC KIT SET & MODULE

MINI SURROUND SOUND 5 CH CODE MX043

This mini surround sound is increasing the quality of sound for your sound generator. It is easy for using and installing.

Technical specifications:

- power supply : 12VDC./ 11mA. max.
- five outputs sound : front output left and right, rear output left and right, and sub-woofer output. (without the power amplifier).
- adjustable sub-woofer frequency output ranges : 50Hz to 180Hz
- surround sound with volume control and push-on push-off switch.
- can be used for the mini home theater or other etc.
- PCB dimensions : 3.52 x 2.31 inches.

How to works:

When has the signal into "IN" point, this signal is fed to buffer circuit(IC1/1 and IC1/2) and sent out from pin 1 of IC1/1 and pin 14 of IC1/2. This signal is divided into three ways.

The first way is fed to the low filter frequency circuit through R9, R10, C10. This low filter frequency is set by the values of R17, R18, VR1, C11 and C12. It is sent out from pin 7 of IC1/4 through C4 and sent to the base of TR1 for amplify signal through C16 and drive to "SUB" point. This low frequency can be adjusted from 50Hz to 180Hz with adjust by VR1.

The second way is connected to R5 and R6 which is L+R signal or MONO signal through SW, C8 and C9 and fed to REAR of L and R.

The third way is fed to the different amplifier circuit through R7, R8. IC1/3 is configured as divided different of signal L and R (signal L-R). The signal from IC1/3 is sent out to REAR L and R through R16, SW, C8 and C9.

REAR L and R signal is sent to rear left and right of speaker. FRONT L and R is connected directly with input signal L and R.

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. 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. The LED has a flat spot on the body which lines up with the line on the overlay. Now check that you really did mount them all the right way round!

Testing:

Connect the component is following figure 3. Decrease the

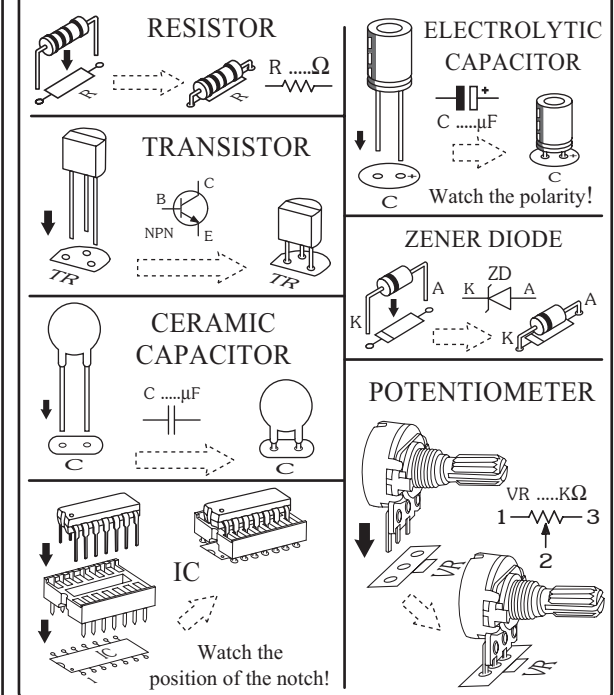
volume of the sound generator maximum. Adjust VR1 and VR2 counterclockwise. Supply the power supply 12VDC to circuit. Increase the volume of the sound generator slowly. You will hear the sound from all speaker. Adjust VR2 clockwise slowly, the sound is surrounding and then adjust VR1 clockwise slowly, the sub-woofer speaker will increase the low sound follow adjusting.

Connector and tuning:

- 12V point is used for connected to the power supply 12VDC. IN point is connected to the VCR, cassette tape etc. at sound output point. FRONT point is connected to the power amplifier of front speaker. REAR point is connected to the power amplifier of rear speaker. SUB point is connected to the power amplifier of sub-woofer speaker. VR1 100K SUB is used for adjust the sub-woofer frequency. VR2 100K SUR is used for adjust the surround sound of rear speaker. SW is used for select the signal of rear speaker. (L+R means that the mono sound, L-R means that the surround sound.)

NOTE: For the power amplifier of sub-woofer channel, requiring the mono amplifier is more than 30 Wrms.

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.

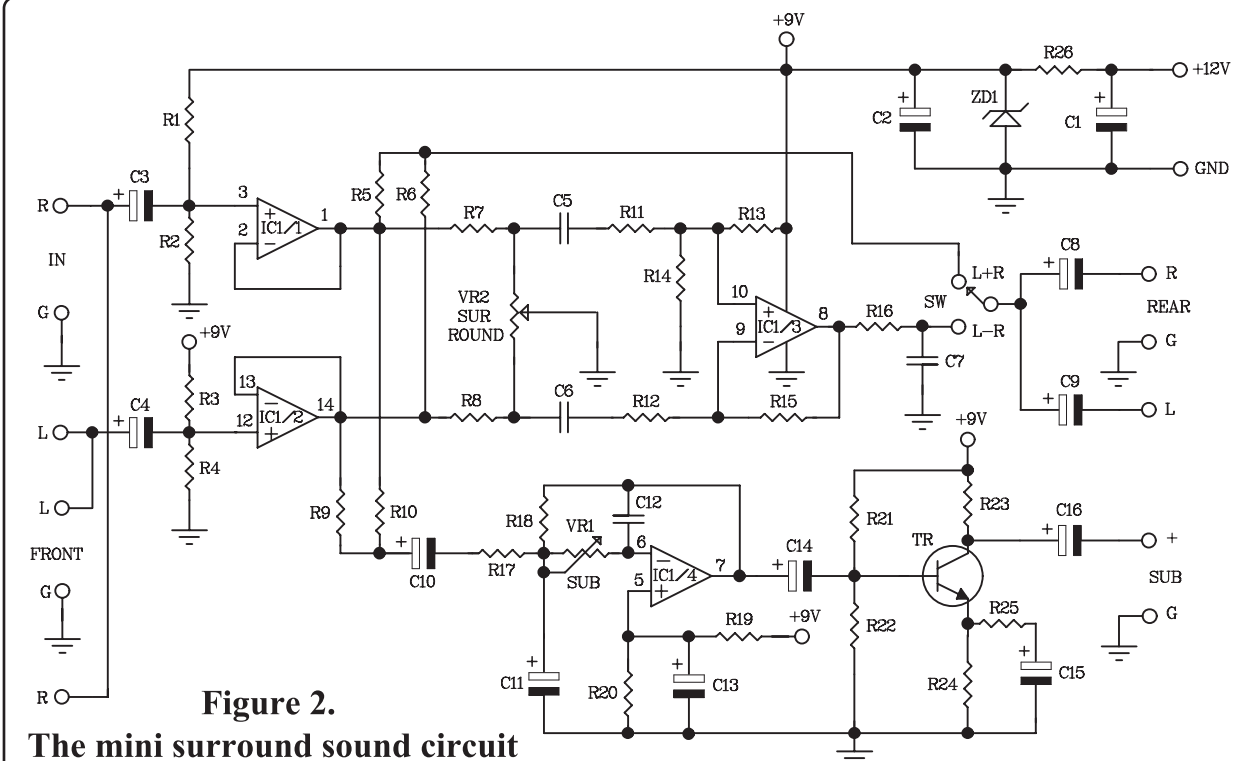


Figure 2.
The mini surround sound circuit

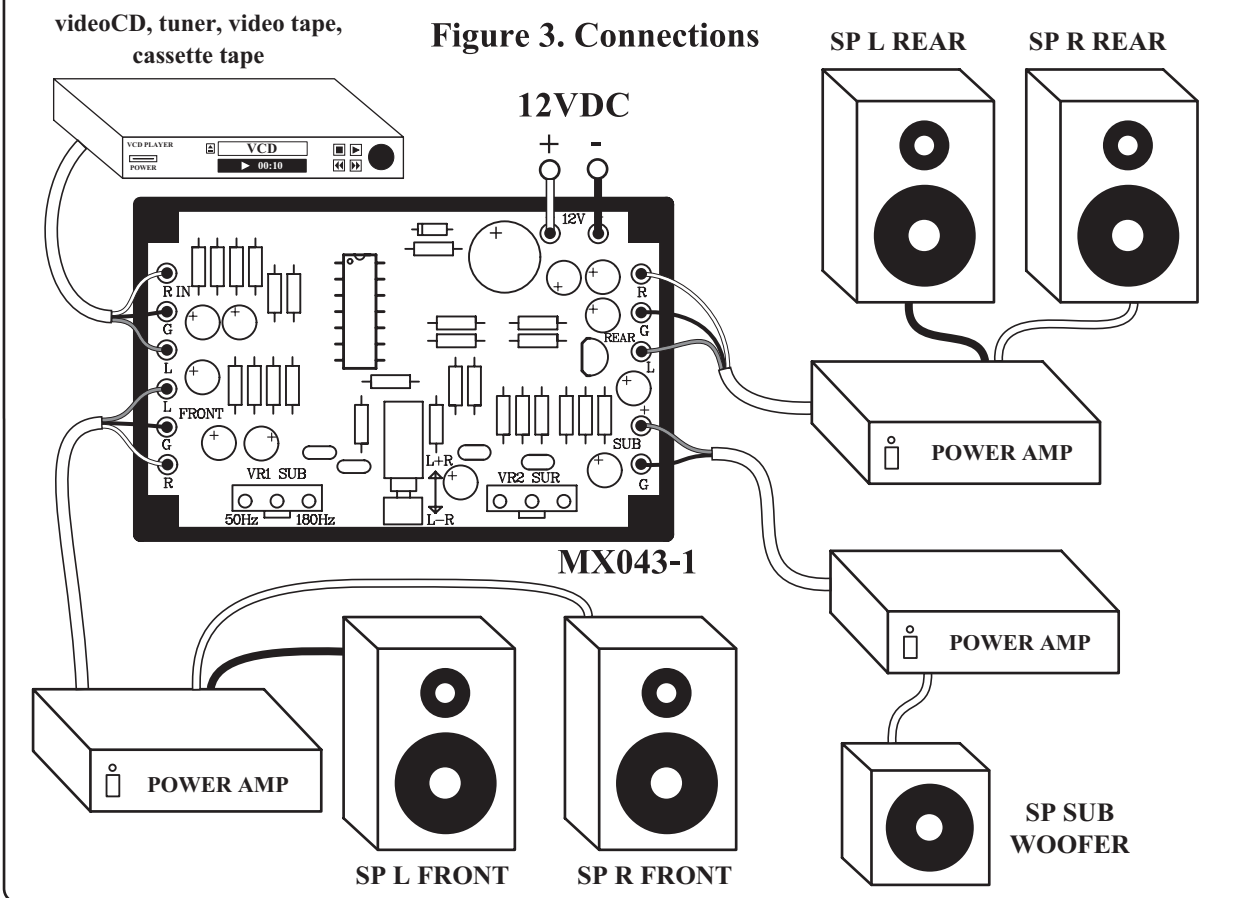


Figure 3. Connections