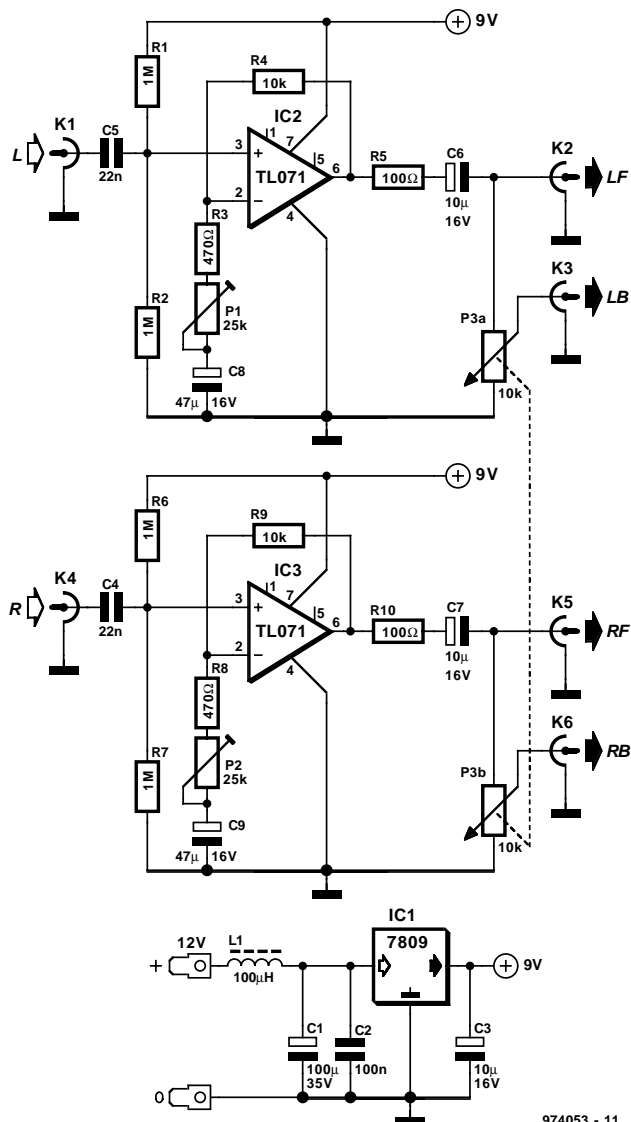
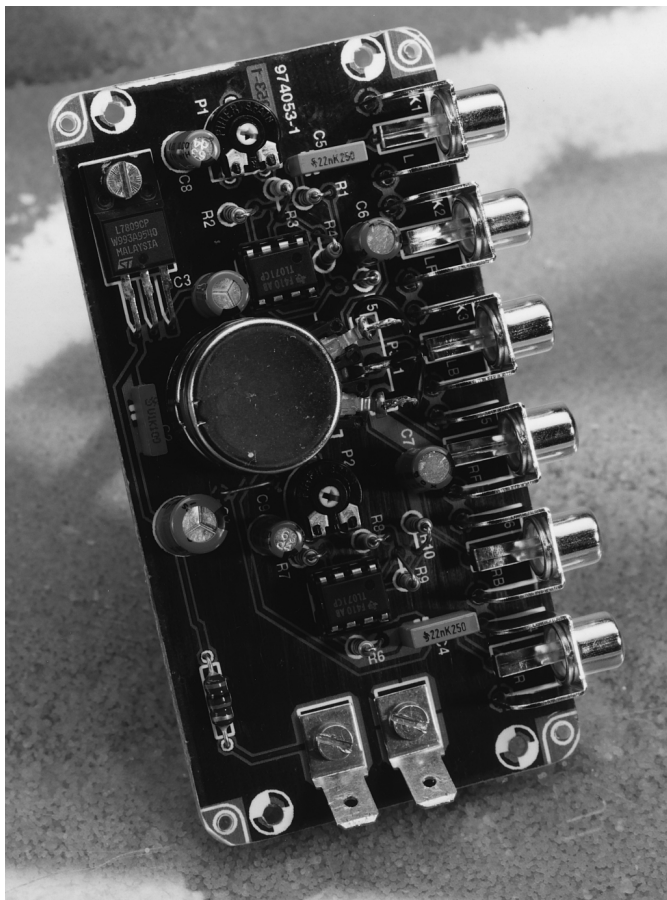


# car booster adaptor



Judging by the cacophony emanating from an increasing number of cars on the road, car radio boosters

unfortunately remain popular with young people. Unfortunately, because deafness among these young people is becoming quite common.

## Components list

### Resistors:

$R_1, R_2, R_6, R_7 = 1\text{ M}\Omega$   
 $R_3, R_8 = 470\ \Omega$   
 $R_4, R_9 = 10\ \text{k}\Omega$   
 $R_5, R_{10} = 100\ \Omega$   
 $P_1, P_2 = 25\ \text{k}\Omega$  preset  
 $P_3 = 10\ \text{k}\Omega$  log stereo potmeter

### Capacitors:

$C_1 = 100\ \mu\text{F}$ , 35 V, radial  
 $C_2 = 0.001\ \mu\text{F}$ , high stability  
 $C_3, C_6, C_7 = 10\ \mu\text{F}$ , 16 V, radial  
 $C_4, C_5 = 0.022\ \mu\text{F}$   
 $C_8, C_9 = 47\ \mu\text{F}$ , 16 V, radial

### Inductors:

$L_1 = 100\ \mu\text{H}$

### Integrated circuits:

$IC_1 = 7809$   
 $IC_2, IC_3 = TL071\text{CP}$

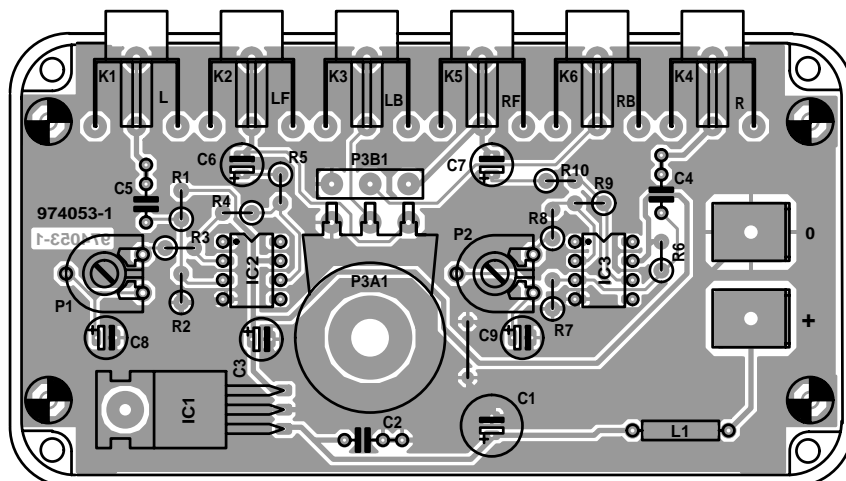
### Miscellaneous:

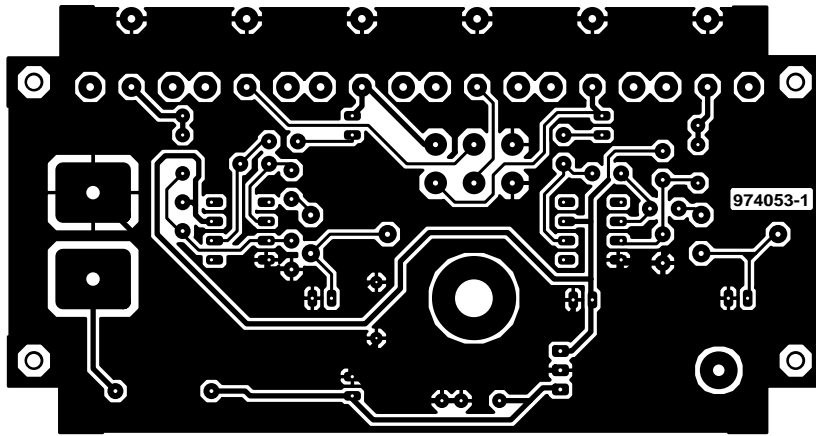
$K_1$ – $K_6$  = audio socket for board mounting  
 2 off car-type connector for board mounting

From a technical point of view, the setup with a booster is often very in efficient, because these power monsters are normally connected simply to the loudspeaker terminals of the existing car radio installation via an attenuator. This

puts the two output amplifiers in series, which is, as said, quite inefficient.

It is much better to take the signal from the wiper of the volume control in the car radio and





use this as the input to the booster. This is normally not much of a job. The signal so obtained must, however, be buffered and sometimes also amplified.

The adaptor provides both

these functions in a simple manner. The stereo signals are applied via  $K_1$  and  $K_2$  and buffered and amplified by an op amp in each channel. The amplification may be set between  $\times 1.5$  and  $\times 22$  with  $P_1$

and  $P_2$  respectively. These levels should be more than adequate for most situations. The peak output voltage is  $2 V_{RMS}$ .

The output in each channel is split into a front and a rear branch

(left-hand front, LF, and left-hand back, LB, and RF and RB respectively). The volume of the rear speakers is set with  $P_3$ .

Regulator  $IC_1$  provides a stable 9 V supply line for the op amps. The circuit draws a current of not more than 7 mA.

The adaptor is best built on the printed-circuit shown, which is, however, not available ready-made.

The input and output terminals are audio sockets for board mounting.

The battery voltage is applied to the circuit via two car-type connectors mounted on the board. When the adaptor is fitted in a small case, care must be taken that  $P_3$  remains accessible.

[Bonekamp - 974053]