

3 channel audio mixer

This audio mixer circuit uses an LM3900 IC but is not a professional audio dj mixer. The IC houses four integrated Norton amplifiers. The advantage of using the four op amps is that they only need a single power supply. Since this amplifier circuit is current controlled, the DC bias is dependent on the feedback coupling.

The schematic diagram shows inverting AC-Norton amplifiers. The DC output must be set at 50 percent of the power supply. In this case, a maximum output can be achieved without distortion (also called symmetrical limitation through overdrive).

In designing this **mini audio mixer circuit diagram** you can freely choose the value of the resistor R2 (100k in the mixer schematic). Set the AC voltage amplification factor through the ratio of R2/R1. To set the amplifier gain correctly, choose the value of R4=2R2 (double the value of R2).

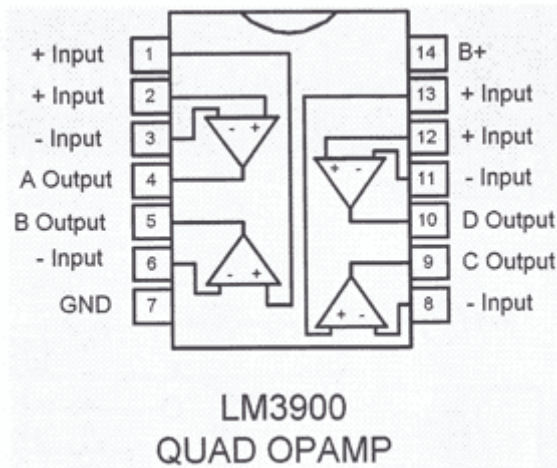
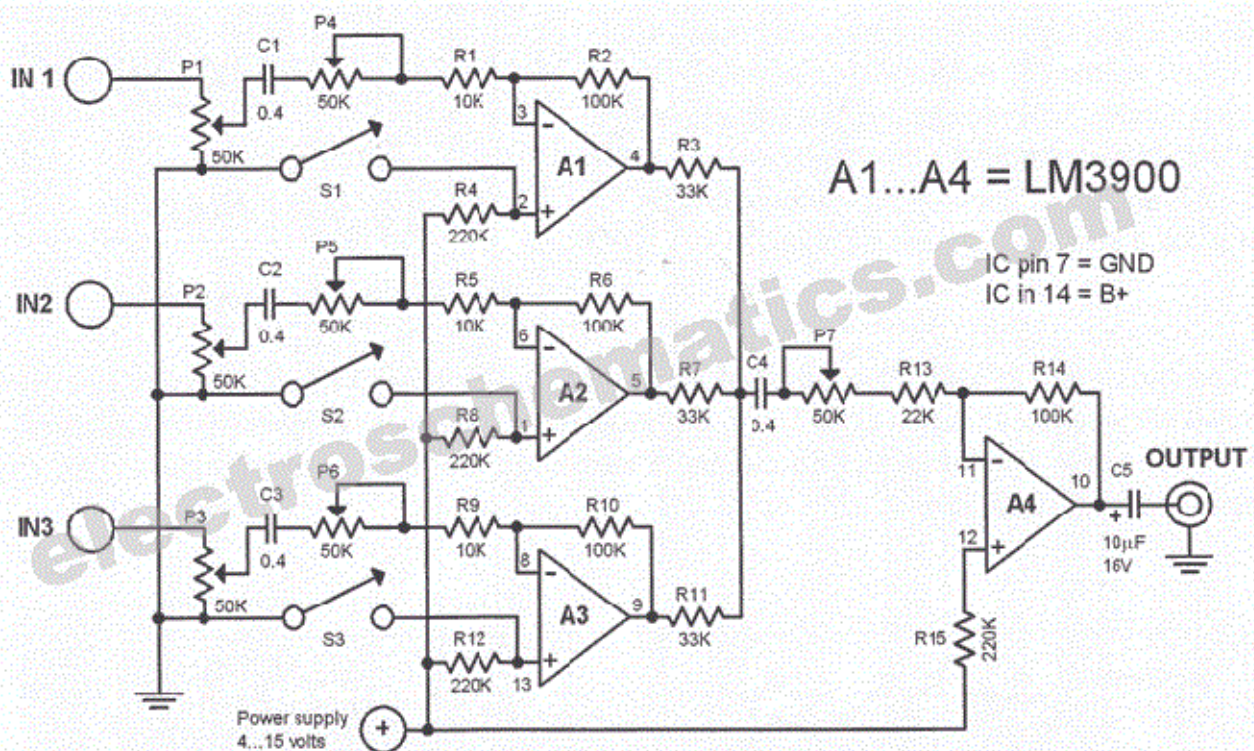


Diagram 1.0 shows the 3-channel sound mixer circuit using three Norton-opamps. The input levels can be set by potentiometers P1 or P3. Furthermore, each input level can be trimmed with the help of trimmers pots P4 to P6 to adapt each input to the source. The resistors at the non-inverting inputs of the opamps work as DC bias and set the DC output at 50 percent of the power supply for this powered audio mixer. All three input signals are summed by the fourth opamp A4 through the resistors R3, R7 and R11. The common volume level is controlled through the potentiometer P7. You can switch an input channel on or off through the switches S1 and S3. An input channel is turned off when its switch is closed. It is also possible to replace these mechanical switches with transistor gates. By doing so, you can build an analog multiplexer circuit that can be easily expanded by several inputs.



Audio Mixer Circuit

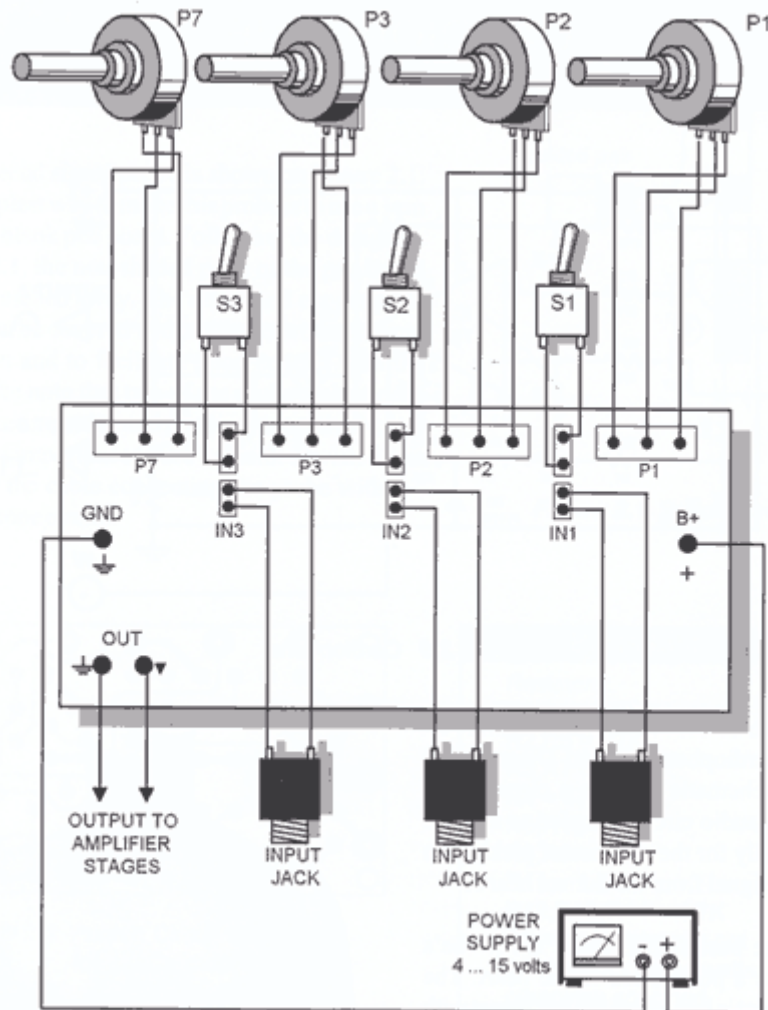
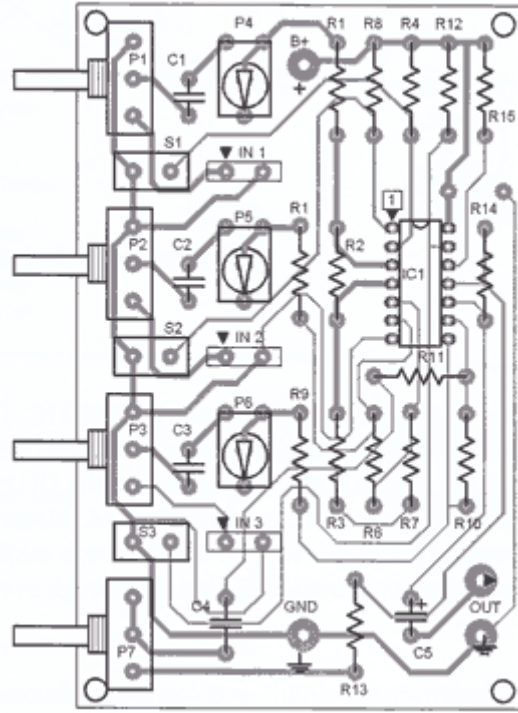
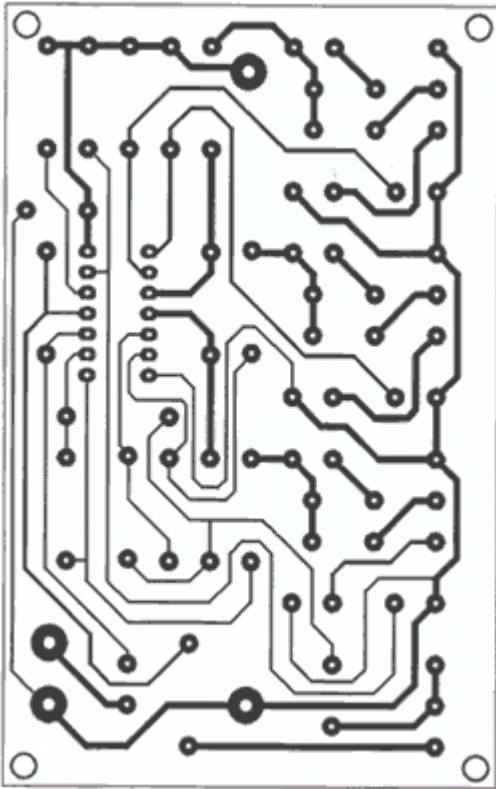


Figure 1.3 External wiring layout