

**79** Audioscope is a circuit which enables low frequency signals to be seen on the screen of a television receiver. The electronic circuit produces vertical bars on the screen, moving in the rhythm of the LF signal. The circuit has the advantage that no modifications need to be made to the TV set.

The heart of the circuit is the astable multivibrator (T2 and T3), which oscillates at a multiple of the line frequency. The following transistor T4 amplifies this signal and at the same time improves the edges of the square wave. This signal will now contain harmonics throughout the VHF band, and even into the UHF band, so it can be fed direct to the aerial input of a television receiver. After synchronisation with the line frequency, the screen shows one or more black bars, according to adjustment. Synchronisation and the required number of bars are set with P2. This potentiometer is adjusted until the picture is stationary with P1 set at zero (no LF signal).

After P2 has been adjusted, P1 can be turned up slowly. The bars will move horizontally in the rhythm of the input signal.

Further interesting effects can be achieved, such as by mixing a normal

## Parts list

### resistors:

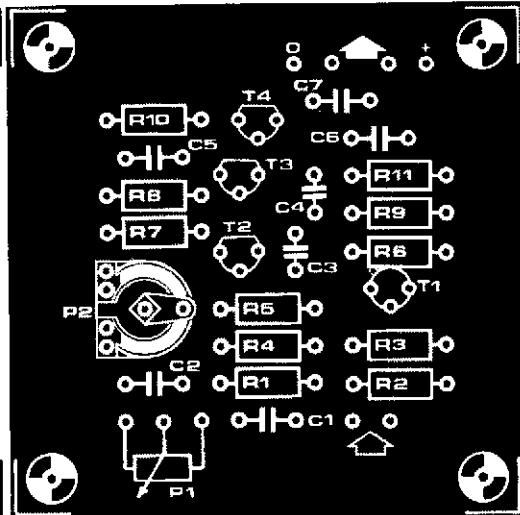
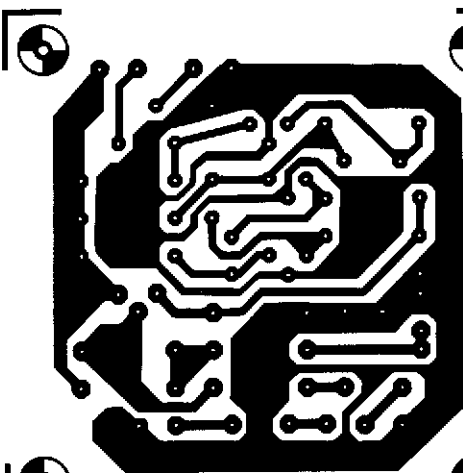
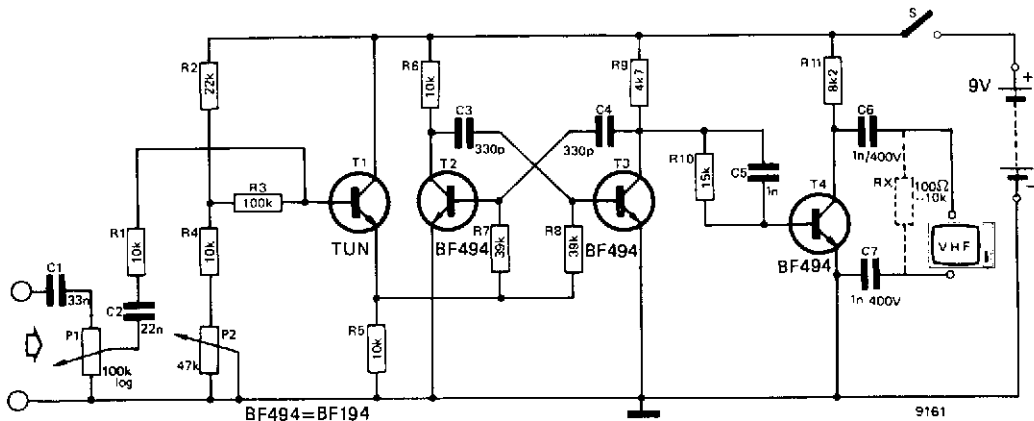
- R1,R4,R5,R6 = 10 k  
 R2 = 22 k  
 R3 = 100 k  
 R7,R8 = 39 k  
 R9 = 4k7  
 R10 = 15 k  
 R11 = 8k2  
 P1 = 100 k log  
 P2 = 47 k


### capacitors:

- C1 = 33 n  
 C2 = 22 n  
 C3,C4 = 330 p  
 C5 = 1 n  
 C6,C7 = 1 n/400 V

### semiconductors:

- T1 = TUN  
 T2,T3,T4 = BF494,BF194





TV picture with the accompanying sound which is also made visible. The output of the circuit is simply connected to the (VHF) aerial input of the television receiver. The described effect shows up best on channels 2, 3 and 4. The current source of this circuit is provided by a 9 V battery.