

Smoggy

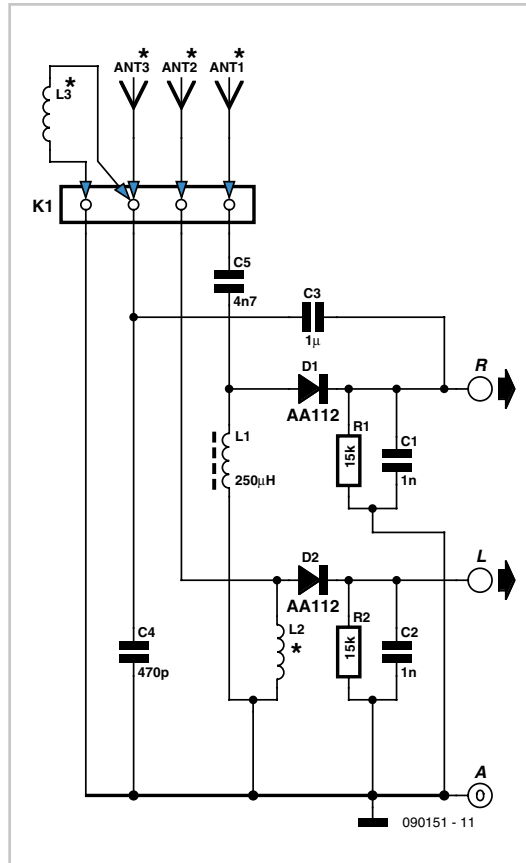
use your Walkman to detect electromog

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Even if your good old (Sony) Walkman sees little use nowadays it would be a shame to get rid of it altogether. The more so when just removing the tape head would allow the built-in audio amplifier to become an outstanding electromog detector for a variety of purposes.

Looking at the schematic, readers with RF experience will have no difficulty in recognising the diodes and coils of the two detector-receivers, which serve to capture and demodulate RF signals. With its coil of four turns (L2) one receiver covers the higher frequency range of the electromagnetic waves, whilst the second detector takes care of the lower frequency range. For this reason a coil with a greater number of turns is required: L1 is an RF choke of about 250 μH . The precise value is not critical and it could equally be 220 μH or 330 μH .

The outputs of both detector-receivers are connected to the cables disconnected previously from the tape heads, feeding the right and left channel inputs to the Walk-



man's audio amplifier. Please note here that the screening of the tape head cable does not have to be absolutely identical to the ground

connection of the amplifier circuitry. As we are dealing with a stereo amplifier, we are listening into both channels and thus both RF ranges at the same time.

One channel of the amplifier can also be used to demodulate low-frequency magnetic alternating fields via a capacitor (C3) bypassing diode D1 and connecting either a third coil (L3, for instance; a telephone recording adapter) as the pickup device or else a long piece of wire for acquiring low frequency AC electrical fields. Sources like this are discernible mainly by a distinct 50 Hz (or 60 Hz) humming in the earphones.

Predicting what you may hear down to the very last detail is difficult, since every locality has its own, individual interference sources. Nevertheless, with practice users will succeed in identifying these interference sources by their particular audio characteristics.

To sum up, four different 'sensors' can be connected to the inputs of this circuit: ANT1 (approx. 50 cm long whip antenna), ANT2 (3.5 cm short stub antenna), ANT3 (approx. 1 m long wire antenna for low frequency electrical fields) and a coil for magnetic fields. Finally, two more tips:

1. Use only 'good old' germanium diodes for D1 and D2. Sensitivity will be much reduced if silicon diodes are used, as these have a higher threshold voltage.

2. Smoggy does not provide an absolute indication of field strength and even more so cannot provide any guidance whether anything it detects might be harmful. Its function is to

detect electromagnetic signals and compare their relative magnitude.

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