

tips

CMOS Radio

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The circuit shown is of a simple MW receiver based on the 4011 CMOS IC.

The four gates in this package are used as linear amplifiers by connecting their inputs together and applying negative feedback.

L1, 80 turns of 22 SWG enamelled wire close wound on a 3/8" diameter ferrite rod, is the pickup coil. This is tuned by the 500p trimmer and the resulting tank circuit referred to earth at RF by C1.

The high input impedance, that of IC1/1, 'seen' by the tank circuit ensures that little damping occurs, and thus the receiver is highly selective. The output of IC1/1 is an amplified RF signal and is passed to IC1/2 for detection.

The unwanted RF appearing at the output of the detector is removed by the lowpass filter formed by R4 and C2.

The audio signal is then fed to an

amplifier formed by IC1/3 and IC1/4.

The circuit's current consumption is about 10 mA when operated from a 9 V supply.

Note that the IC used must be a 4011AE and not the 4011B whose input protection network will prevent it from operating in the linear mode.

