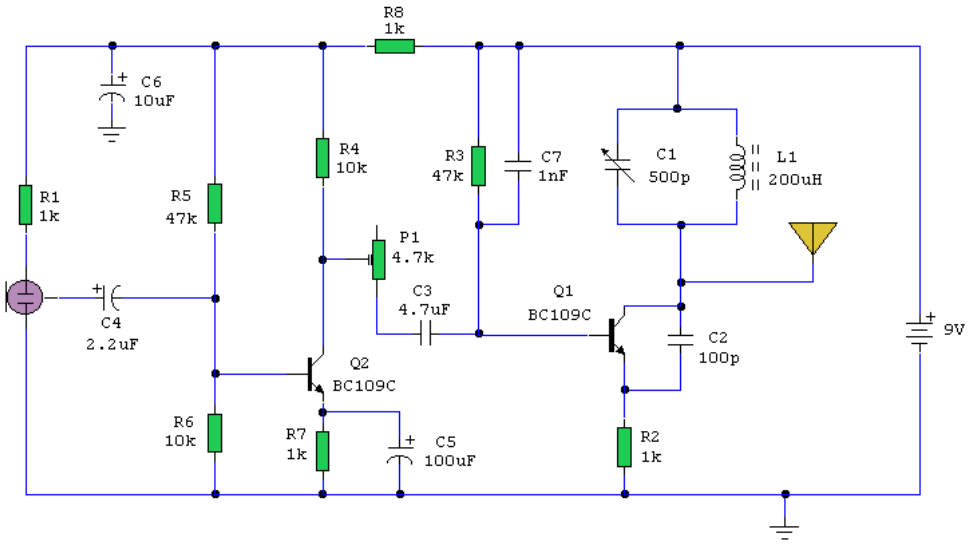
AM Transmitter



Notes:

Please read the disclaimer on this site before making any transmitter circuit. It is illegal to operate a radio transmitter without a license in most countries. This ircuit is deliberately limited in power output but will provide amplitude modulation (AM) of voice over the medium wave band.

The circuit is in two halfs, an audio amplifier and an RF oscillator. The oscillator is built around Q1 and associated components. The tank circuit L1 and VC1 is tunable from about 500kHz to 1600KHz. These components can be used from an old MW radio, if available. Q1 needs regenerative feedback to oscillate and this is achieved by connecting the base and collector of Q1 to opposite ends of the tank circuit. The 1nF capacitor C7, couples signals from the base to the top of L1, and C2, 100pF ensures that the oscillation is passed from collector, to the emitter, and via the internal base emitter resistance of the transistor, back to the base again. Resistor R2 has an important role in this circuit. It ensures that the oscillation will not be shunted to ground via the very low internal emitter resistance, r_e of Q1, and also increases the input impedance so that the modulation signal will not be shunted. Oscillation frequency is adjusted with VC1.

Q2 is wired as a common emitter amplifier, C5 decoupling the emitter resistor and realising full gain of this stage. The microphone is an electret condenser mic and the amount of AM modulation is adjusted with the 4.7k preset resistor P1.

An antenna is not needed, but 30cm of wire may be used at the collector to increase transmitter range.

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