

# FOUR-STAGE FM TRANSMITTER

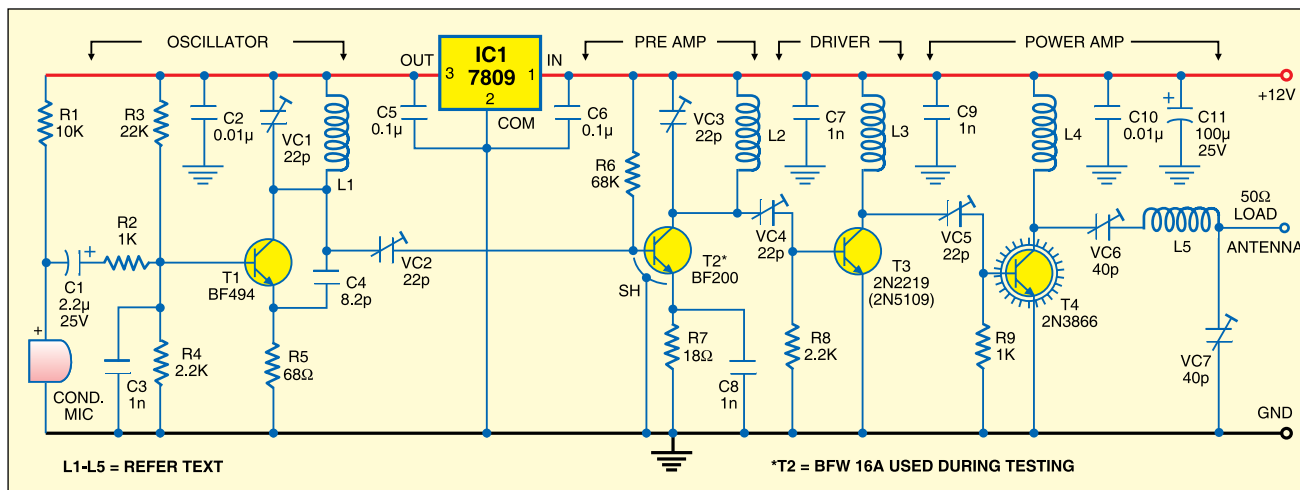
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This FM transmitter circuit uses four radio frequency stages: a VHF oscillator built around transistor BF494 (T1), a preamplifier

the pre-driver stage. You can also use transistor 2N5109 in place of 2N2219. The preamplifier is a tuned class-A RF amplifier and the driver is a class-C RF amplifier. Signals are finally fed to the class-C RF power amplifier, which de-

frequency generated. You can also use a 12V battery to power the circuit.

Assemble the circuit on a general-purpose PCB. Install the antenna prop-



built around transistor BF200 (T2), a driver built around transistor 2N2219 (T3) and a power amplifier built around transistor 2N3866 (T4). A condenser microphone is connected at the input of the oscillator.

Working of the circuit is simple. When you speak near the microphone, frequency-modulated signals are obtained at the collector of oscillator transistor T1. The FM signals are amplified by the VHF preamplifier and

livers RF power to a 50-ohm horizontal dipole or ground plane antenna.

Use a heat-sink with transistor 2N3866 for heat dissipation. Carefully adjust trimmer VC1 connected across L1 to generate frequency within 88-108 MHz. Also adjust trimmers VC2 through VC7 to get maximum output at maximum range.

Regulator IC 78C09 provides stable 9V supply to the oscillator, so variation in the supply voltage will not affect the

erly for maximum range.

Coils L1 through L5 are made with 20 SWG copper-enamelled wire wound over air-cores having 8mm diameter. They have 4, 6, 6, 5 and 7 turns of wire, respectively.

**EFY note.** This transmitter is meant only for educational purposes. Use of this transmitter with outdoor antenna is illegal in most parts of the world. The author and EFY will not be responsible for any misuse of this transmitter. ●