QUALITY FM TRANSMITTER

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This FM transmitter for your stereo or any other amplifier provides a good signal strength up to a distance of 500 metres with a power output of about 200 mW. It works off a 9V battery.

The audio-frequency modulation stage is built around transistor BF494 (T1), which is wired as a VHF oscillator and modulates the audio signal present at the base. Using preset VR1, you can adjust the audio signal level. The VHF frequency is decided by coil L1 and variable capacitor VC1. Reduce the value of VR2 to have a greater power output.

The next stage is built around transistor BC548 (T2), which serves as a Class-A power amplifier. This stage is inductively coupled to the audio-frequency modulation stage. The antenna matching network consists of variable capacitor VC2 and capacitor C9. Adjust VC2 for the maximum transmission of power or signal strength at the receiver.

For frequency stability, use a regulated DC power supply and house the transmitter inside a metallic cabinet. For higher antenna gain, use a telescopic antenna in place of the simple wire. Coils L1 and L2 are to be wound over the same air core such that windings for coil L2 start from the end point for coil L1. Coil winding details are given below:

L1: 5 turns of 24 SWG wire closely wound over a 5mm dia. air core

L2: 2 turns of 24 SWG wire closely wound over the 5mm dia. air core

L3: 7 turns of 24 SWG wire closely wound over a 4mm dia. air core

L4: 5 turns of 28 SWG wire on an intermediate-frequency transmitter (IFT) ferrite core