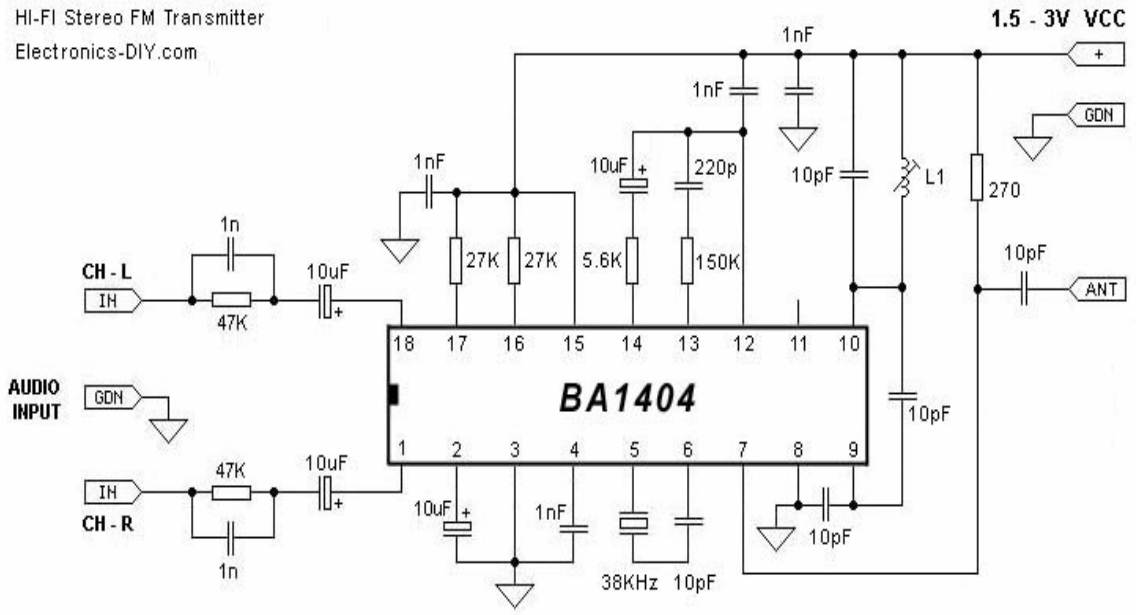
Here's a simple **stereo FM transmitter** for sending the music around the house, or creating a wireless link between your iPod and a receiver in your car, this transmitter will let you do these things easily. With ***BA1404 Stereo transmitter*** you will be able to transmit MP3 music from your iPod, computer, discman, walkman, TV / SAT receiver, and many other audio sources.



This *FM transmitter design* is a result of many hours of testing and tweaking. The goal was simple; to test many existing *BA1404 transmitter* designs, compare their performance, identify weaknesses and come up with a new ***BA1404 FM transmitter*** design that improves sound quality, has very good frequency stability, maximizes transmitter's range, and is fairly simple for everyone to build. We are happy to announce that this goal and expectations have been met and even exceeded.

The transmitter can work from a single 1.5V cell battery and provide excellent crystal clear stereo sound. It can also be supplied from two 1.5V battery cells to provide the maximum range.

One of the qualities of **BA1404 Stereo FM transmitter** is excellent frequency stability. This is mainly due to a use of high quality 3.5 turn variable coil. Tunable RF coils are ideal for precise frequency tuning because their magnet wire is halfway embedded within the plastic, which minimizes frequency drifts. Regular air coils are not preferred for professional broadcasting because the coil expands and contracts with temperature changes. That's the very reason why variable coil was chosen as a substitution for an air coil and a variable capacitor.Another quality of the presented *BA1404* ***stereo fm transmitter*** is a crystal clear stereo sound and improved sound separation. There are several factors that account for improved sound quality and a separation. First reason is the use of 38 KHz crystal which provides rock solid frequency for stereo encoder. Another reason is the use of two 1nF decoupling capacitors one for *BA1404 chip* and another for 3.5 variable coil. These capacitors have to be as close as possible to a *BA1404* chip and a variable coil because this will GREATLY improve the sound quality, sound separation and even frequency stability as well. What they do is filter out the noise in the incoming DC voltage. If the noise enters *BA1404 chip stereo generator* will include it in a transmitted sound affecting both the sound and *multiplex* signal that is responsible for generation of the clear stereo signal. If that noise enters it will also be included in a generation of subcarrierfrequency affecting the frequency stability. Most people are not aware of how important this is and might place them in a wrong location, away from the target components which provides no use, or worse decide not to use these capacitors at all.

Another factor that is extremely important and which improves overall quality of the whole *BA1404 transmitter* including frequency stability, sound quality and sound separation is the use of the ground plane on the *transmitter's PCB*. It is recommended that ground plane should always be used in circuits that deal with higher frequencies.