Circuit Description

This transmitter is power by 6V DC (Batt. Or AC/DC adapter). In case Ext AC/DC adapter is used, the input voltage will go through REG1, which is a 6V regulator to limit the actual voltage running the circuitry.

The transmitter is two channel selectable, the frequency of CHA is 914MHz, and CHB is 912MHz; these carrier frequency is generated by Q1, Q2 & Q3, and control by the PLL IC MB15E03. Different channel setting will caused the CPU GM34112 output different data to MB15E03, in order to lock into different frequency.

The Modulator is a standard FM Stereo Multiplex signal, which is generated by the FM Multiplex IC-BA1404.

Since the transmitter may connects to different audio sources, which may have different input level and impedence; therefore, a ALC circuit is (BA3308) added. The output of the ALC circuit remains constant even the input level varys from 200mV RMS to 10V RMS.

In order to further improve the signal to noise ratio, a compandor circuit is consisted on the system. On the transmitter side, the audio signal will be compressed by IC2, and IC3 before fed into the FM Multiplexer (IC4 BA1404).

The circuit consist a 'Auto-off' function, the 'audio signal detector' Q8, Q9 will output a signal to uP GMS34112 in case silence on input is found. The uP will trun the LED into 'blinking' mode for indication, and keep counter the length of the silent period. If the 'silent' is found more than certain time, the uP will turn off the whole transmitter via Q5 and Q6 automatically. It is required to put the SW1 back to off position and then switch on again to wake up the circuitry.