

### **AUDIO CIRCUIT**

The audio signal is injected via the microphone sensor into the audio circuit composed of the op. amp IC U2 (4558), & compandor IC U1 (NE571). The signal is compressed via the compandor circuit at a 2:1 ratio and is pre-emphasized by U2. The level of the output signal is controlled by the resistors 4.7k, 1k and 10k VR.

### **MODULATOR CIRCUIT**

The modulator circuit is a direct FM type built around the local oscillator controlled by Crystal XTAL1 (37 times to local oscillator), variable capacitance diode IS2638, variable conductor IFT1(15uH), Q4,Q5,Q6(T33), IFT 2~5(31/31/62/29). The modulated output from the oscillator is sent to the RF pre-amp and RF final amplifier which boosts the output to a nominal level (<1mW).

### **RF PRE-AMPLIFIER & FINAL AMPLIFIER**

The 3-stage amplifier, using two transistors Q7(T33),Q8(R24),Q9(415), culminating with a normal transmitter output of <1mW. The output filter (VC1,VC2,VC3, Cap x3, L x 3 suppress the output harmonics and matches the output to the integrate antenna.

### **POWER STEADY CIRCUIT**

2 transistors Q2,Q3(L6 x2) for up-voltage, IC3 (6371) and IC4 (7805) provide voltage to modulation and amplifier respectively. The battery supplies the audio input circuit directly.

LANSEN AUDIO EQUIPMENT COMPANY

#17, FU' AN DONG ROAD, ENPING, CHINA

Telephone: +86-750-7928726

Fax No. :

+86-750-7928726

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FCC ID: YXXUHF-18

## **Operation Description**

The EUT is powered by 3V (2 x AA) battery and have one channel between 614-698 MHz FM transmitter, it's Occupied Bandwidth is 70kHz, it cannot be tuned by the end user.

During manufacturing process, adjusting the coils IFT 1-5 to get requested frequency, and may exchange 3 capacitors paralleled with them from 3-30 pF if any.