

AUDIO CIRCUIT

The audio signal is injected via the microphone sensor into the audio circuit composed of the op. amp IC1 (4558), & compandor IC2 (571). 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 X1 (37 times to local oscillator), variable capacitance diode D1 BB179, variable conductor IFT 1~5 (62/62/31/31/71 uH), Q1~6(T33), variable capacitor C45(3pF). 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 2-stage amplifier, consist of two transistors Q6, Q7 (N42 x 2), culminating with a normal transmitter output of <1mW. The output filter (VC49, C53~55, L8-11) suppress the output harmonics and matches the output to the integrate antenna.

POWER STEADY CIRCUIT

2 transistors Q9,Q10(L6/113T) for up-voltage, IC3 (9104) and U1 (7150) provide voltage to modulation and amplifier respectively. The battery used as ant, Q8 & LED D3 for power display.

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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 100kHz, 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.