Circuit Description of 613000 Parent Unit

Power Supply

Power from AC adaptor is regulated by the regulator circuit formed by Q10 and Z2. The regulator can provide a stable voltage to other circuits.

Receiver RF Amplifier

Signal from antenna is fed to base of Q7 through L2, L5 and C27. The signal is then amplified by the tuned amplifier Q7 and L6.

Local Oscillator

The local oscillator circuit consists of X3 (or X4), L7, C30, C32 and C31. The oscillating frequency can be selected by the switch. This signal is fed to mixer inside U7

Mixer, IF Amplifier and Demodulation Circuit

All the mixer, IF amplifier and demodulation circuit are inside U7. The IF is filtered by F1. The audio signal is output at pin 9 of U7.

Audio Power Amplifier

The Audio Power Amplifier consists of U4. The volume can be adjusted by VOL.

Out of Range Detection Circuit

When there is no RF signal or the RF signal is weak. U5 will turn on to mute the audio (noise) signal. The oscillator forms by U5-C and U5-D will feed a beep sound to U4.

Low Battery Detection Circuit

The battery voltage is detected by Q16. When battery voltage is low, Q15 is turned on. The green LED of LED6 will flash.

Audio Signal Level Indicator Circuit

Audio signal from pin 9 of U7 is fed to base of Q8. According to the audio signal strength, U6 will turn LED1, LED2,LED3,LED4 and LED5 on or off to show the audio signal level.

Mic Amplifier

Signal from microphone is amplified by U1. The mic signal is further amplified by Q5 and then fed to FM modulation circuit.

RF Frequency Oscillator

The crystal oscillator circuit consists of X1 (or X2), VC1, L3, Q4, C9 and C10. The oscillating frequency can be selected by the switch. The capacitance of VC1 is varied by the audio signal from Q5, thus performing the FM Modulation.

Frequency Tripler Circuit

The RF frequency from crystal oscillator is tripled and selected by the tuned amplifier, Q2 and L4. This RF signal will then feed to Transmitter RF Power Amplifier.

Transmitter RF Power Amplifier

The RF Power Amplifier consists of Q1 and L2. The RF signal is amplified before it is transmitted by antenna.

Antenna Matching Circuit

Signal from RF Power Amplifier is transmitted by antenna through the matching circuit, C1, C2 and L1 to reduce the unwanted harmonic.

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