

Technical System Description

Company: Winsonic Technology (Holdings) Ltd.
Model no.: WT-301

A. General description

This product is a simple Walkie Talkie device which use FM as a modulation technique and operates at 49.860 MHz frequency band. This product also includes a watch features with 12-24 hour, calendar and LCD display.

B. Circuit description Transmitting path through transmitting antenna 1

1. The push-to-talk button must be pressed and hold to enable the transmission;
2. When the push-to-talk button is pressed, SW1, SW2, SW3 and SW4 are both switched to position 2;
3. Audio signal picked up by the microphone will be amplified by the audio amplifier. Then, the amplified voice signal will be modulated to a FM signal by a local oscillator of 24.930 MHz;
6. Finally, the carrier frequency of the FM signal will be doubled by a frequency doubler to a carrier frequency of 49.860 MHz and the FM signal will be further amplified by a RF amplifier before transmission through a permanently attached transmitting antenna 1.

C. Circuit description Receiving path through receiving antenna 2

1. The push-to-talk button must be released to enable the Walkie talkie for receiving signal from a walkie talkie pair;
2. When the push-to-talk button is released, SW1, SW2, SW3 and SW4 are both switched to position 3;
3. The FM signal from the other walkie talkie will be received from receiving antenna 2, where receiving antenna 2 is an earphone. Then the received FM signal will first pass through a matching circuit (T3) at 49.860 MHz; It will be amplified by an RF amplifier and the signal will then be demodulated by a narrow band FM I.F. IC (MC3361).
4. The demodulated audio signal will be amplified by the audio amplifier and reproduced in an earphone.