

## Circuit Description

The Walkie talkies unit consists of four major sections, RF sections and oscillation sections and amplifier sections and power sections.

### 1) RF sections:

The section is made up of:

- Antenna matching network

The section is made up of : L1,T1

- Receiver circuit (as emission circuit.)

The section is made up of: T1,C3,C4,C5,R3,R4,C2,R2,Q1,SW1-1,SW1\_3,C6.

While the push button is pressed the oscillation and emission circuit will be turned on and send out the radio frequency signal. While the push button is no pressed the oscillation circuit will be turned off and receiver circuit will be turned on. The walkie talkies will receives incoming radio signals and converts them to perceptible sound.

Process of signals and function : The circuit is to be in a state of transmitting when the "push button" is pressed ,the section of circuit can amplify the 49.860MHz BPSK signals recieved from the "amplifier sections" and then transmit it through the antenna .If the "push button" is not pressed ,the section of circuit would be in a state of receiving , it could amplify the BPSK signals received through the antenna then modulate it into audio-frequency signals and after that, send it to the "amplifier sections" to amplify its audio-frequency.

### 2) Oscillation sections

The section is made up of: Y1 49.860MHz, R1,C1, SW1\_2

The oscillation circuit is controlled by the push button. While the push button is pressed the oscillation circuit will be turned on. The oscillation circuit is provide the 49.860MHz signals for the RF sections.

### 3) Amplifier sections

The section is made up of:

R8,R12,C7,C13,R7,R6,C8,C9,R5,C16,R10,R9,C11,T2,Q2,Q3,C17,SPEAKER,SW1\_4,C10.

The Amplifier sections circuit is controlled by the push button.

The amplifier circuit will enlarge the audio signals, when the push button is pressed .

Process of signals and function:

The circuit is to be in a sate of transmitting when the "push button" is pressed ,this section of circuit would amplify the audio-frequency received from the pickup ,then send it to "RF button" to modulate immediately .When the "push button" is not pressed ,this section of circuit would in a state of receiving ,it amplifies the audio-frequency signals received from "RF section" ,and then transforms the audio-frequency signals into sounds through loudspeaker .

### 4) Power sections

The section is made up of: Battery (DC9V), C14,C15.

This section of circuit would support the power of batteries to the three sections of circuits above.