

2. PARENT UNIT

[1.1] TRANSMITTER SECTION

RF Frequency Oscillator

Q3 function as the oscillation that the frequency is determined by C6, C7, T4, X1 and X2.

RF Amplifier and Power Amplifier

Q1 is the power amplifier of transmitter

Transmitter and Receiver Switch

D1 and D9 function as the transfer switch between transmitting and reception .

Circuit for Suppression of Spurious Radiation

RF power output from the collector of Q1. The output of T1 coupled to the antenna through triple "LC" and "PI" network (C2, L2, L1,C1) which servers both of matching impedance and reducing harmonic to adequate level. The RF maximum power is limited by the resistor R2.

Modulation

U1-A,U1-B is the MIC amplifier. The amplifier audio signal from U1-B output is fed to VD1 for making F3E type modulation.

Circuit for limiting Modulation

Q8 and Q7 give the auto MIC control circuit. When the modulating voltage is excessive, the DC voltage will be obtained which on the emitter of Q8 and then fed to Q7. This feedback system keeps the maximum modulation.

Hidden Tone Oscillator and Modulation

Q22, 20, VR1 combines hidden tone oscillator that the frequency is about 5KHz. VR1 is used to alignment the hidden tone frequency. The hidden tone output signal from the output of Q20 fed to VD1 to modulate through the buffer Q22

Hidden Tone Oscillator

Q21 functions as the voice control hidden circuit. When you push the SW5 (PTT switch), there is a high level fed to the base of Q21, and make it goes to ON. The hidden tone oscillator have a higher frequency which is voice tone. When you press down the SW3 (soothe switch), Q21 is OFF, so the lower frequency of hidden tone can be obtained ,which is soothe control tone.

Power Supply

SW2 is power supply switch for the parent unit.

U3 is a regulator that the output DC voltage is 5V. This stable output voltage is used to feed to ICs ,Power amplifier, RF amplifier .

[1.2] RECEIVER SECTION

The receiver part is a conversion superheterodyne with the local oscillator at frequency higher the received frequency to produce the 455KHz.

Local Oscillator

X3, X4 C37, C38, C4, L7 and the circuit built in IC U2 functions as a local oscillation.

RF Amplifier

RF signal from antenna is fed to the base of Q4 through the antenna matching coil T5. Q5 is the second stages RF amplifier. The output from the collector of Q5 is fed to the Pin16 of U2 for mixing.

IF Amplifier

F2 and built in IC U2 functions as the IF amplifier that the IF signal output is fed to demodulation circuit T8 and the circuit built in IC U2.

Demodulation

IC U2 function as the demodulation circuit.

Audio Power Amplifier and Volume Control

IC U4 is audio power amplifier. VOL1 is the volume that used to control the audio output level.

PLL Tone Detector

IC U5 function as PLL tone detector. When the desired tone signal is received from Baby unit ,the Pin8 of IC U5 will go to low. This level provide control signal to the transistor of Q2.

Auto Squelch

When there is desired tone signal is fed to pin11 of U2, Pin 8 of U5 give the low level which make the transistor Q2 to OFF. The demodulated audio will be amplified through the U4 fed to speaker. When there is undesired tone signal is fed to pin11 of U2, Pin 8 of U5 give the high level which make the transistor Q2 to ON status. The demodulated audio signal will be shorted to ground through the Q2.