

Circuit Description

Frequency Determining and Stabilizing Circuit

Q4 function as a modified Coplitts type oscillator with PLL keep trap to maintain its stability.

RF Amplification

The output of Q4 feeds to a pre-amp. Q5 to raise the power to certain level then the signal feeds to the final stage Q6 for further amplification. At last, this signal passes through a lowpass filter and antenna switch before feeds to the antenna.

Circuits for Suppression of Spurious Radiation

In addition to interstage filtering, the power amplifier Q6 output has also a PI lowpass filter. C58, L9, C59, L10, C60 serves both matching as well as harmonic and spurious suppression.

Modulation

The output of the modulator driver amplifier is filtered and feeds to D3 for FM modulation.

Circuits for Limiting Modulation

The modulation limiter performs by Q15, D10 and D11. When the modulating voltage is excessive, the clipper D10 and D11 is function.

Receiver Circuit

The receiver is a double conversion super heterodyne system with ref frequency at 20.95MHz. The system will amplify the receive signal then filter and down convert to 21.4MHz (1st IF). This signal will be filtered and down convert to 450KHz (2nd IF). At last, the baseband signal will extra via quadrature circuit.

Miscellaneous

U4 function as a compander and U3 function as a speaker driver.