

IX. CIRCUIT DESCRIPTION

1. Transmitter Section.

FM modulated output from the V.C.O which is at the transmitting frequency is simply fed to an 3-stage amplifier followed by the antenna matching and Low Pass Filter

1.1. To turn the PA(Power Amp), on, Press and Hold PTT(Push to Talk) switch. CPU controls Q501(VCO power supply switching transistor) and Q502[PA amplifier (Q201,Q202,Q203) and diode(D201,D101)bias switching transistor].

The PA is a broadband 3-stage transistor amplifier. Q204 is for temperature compensation of Q203.

1.2. MIC Amp, Pre-emphasis and Audio limiter.

U801A is MIC amplifier which has 14.5dB gain and Pre-emphasis amp(6dB/oct, 300Hz ~ 2.5kHz).

D701 is audio limiter to protect over-deviation(max deviationn 2.5kHz)

1.3. Low Pass Filter(3kHz ~ 20kHz)

U801 is Low Pass Filter with 20dB/oct slope at 2.7kHz ~ 20kHz.

This is for eliminating the wanted high audio frequency(3kHz ~ 20kHz modulation to meet the occupied band width. To test the response, connect bias(=220k Ω)between pin12 in U801 and 1/2VCC line (junction of R701 and R702)

1.4. CTCSS Band Rejection Filter(HPF)

This filter is for rejecting CTCSS band (67Hz ~ 250Hz) from MIC amplifier. Otherwise CTCSS tone will be mixed with voice and fed to VCO modulation input. Then, the recieving set has a trouble in decoding CTCSS tone from the signal mixed with voice.

CTCSS tone is generated at CPU using digital to analog converter method and fed to modulator via Low Pass Filter(3kHz ~ 20kHz).