TECHNICAL DESCRIPTION

1. TRANSMITTER SECTION

An FM modulated output from the VCO which is transmitting frequency is fed to a 3-stage amplifier followed by the antenna matching circuit and a Low Pass Filter will be transferred to the antenna.

1.1. To turn the Power Amplifier (PA) on, press and hold the PTT button (Push-To-Talk). CPU controls Q506-507 (VCO power supply switching transistor) and PA amplifier (Q300-Q305) and diode (D302, D101) bias switching transistor. The PA is a broadband 3-stage transistor amplifier. D302 is for temperature compensation of Q303-305.

1.2. MIC Amplifier, Pre-emphasis, and Audio Limiter. U701-A is a mic amplifier that has 14.5 dB gain and pre-emphasis amplifier (6dB/oct, 300Hz to 2.5KHz). U701-B is an audio limiter to protect over-deviation (MAX DEV: 2.5KHz).

1.3. Low Pass Filter (3KHz-20KHz). U701C is Low Pass Filter with 20dB/oct slope at 2.7KHz-20KHz. This is for eliminating the unwanted high audio frequency (3KHz-20KHz) modulation to meet the occupied bandwidth.

2. RECEIVER SECTION

2.1. The signal from the antenna is amplified via Q101 filtered by L181, L182, L104, and L106 (Saw 465MHz).

2.2. The amplified signal is mixed with first local driven by VCO-1 (FRS 440-445MHz).

2.3. First IF 21.7 MHz is filtered by crystal filter and amplified for second mixer.

2.4. Second mixer output is 450KHz. The second local is driven by PLL crystal oscillator via inner buffer amplifier.

2.5. U101 IF IC demodulates audio. The high frequency audio band is amplified by built-in Op Amp in U101 and rectified to DC (0.7-1.0V) to control scan control in U101. This is for detecting receiving signal. Scan control output is fed to CPU to turn speaker ON/OFF.

2.6. The audio is filtered by U701D. Finally, received signal is filtered by U701D (3KHz-20KHz) and drive speaker (U602).