

PT-2208 (2) Operational Description – Circuit Description

RECEIVER

The signal received by the antenna passes through the conversion circuit (D10, D11 disconnected) and BAND PASS FILTER LC and is amplified at RF AMPLIFIER. The amplified signal is filtered by BAND PASS FILTER to eliminate unwanted signal before passing through THE FIRST MIXER.

The voltage of transfiguration diode is controlled by the mic CPU IC9 of BAND PASS FILTER. The signal supplied by RF AMPLIFIER mixed with the first local oscillator signal supplied by PLL frequency synthesizer circuit at THE FIRST MIXER and generate THE FIRST IF SIGNAL of 38.85MHz. The FIRST IF SIGNAL passes through the crystal filter (MCFx:XF1) to eliminate the spurious signals of adjacent channel.

After being amplified by SMT audion, the 1st IF signal enters into FM processing chip (IC8). The signal remixed with the second local oscillator signal in the FM procession chip (IC8), which generates the second IF Signal of 450Khz. The Second Local Oscillator Signal will pass through ceramic filter for clearing the useless spurious signals before it is amplified and modulated.

The audio signal, modulated by FM processing chip, is amplified by IC11 and filtered by low pass filter IC11 and high pass filter IC11, and then emphasised by R232 and 226. Afterwards the audio signal passes an Wide/Narrow (Q39) Conversion Switch. The processed audio signal passes the Volume Control Circuit and will be amplified by AF POWER AMPLIFIER- IC4, and then activate the speaker.

TRANSMITTER

The modulated signal from the speaker is amplified by IC 3, after passing through a pre-emphasis circuit and amplified by another IC3 (314). Then, the signal passes a Low Pass Filter IC 3 and removes the portion higher than 3KHz. The gained signal directly enters into the Voltage Controlled Oscillator for frequency modulation..

The transmitting signal from Voltage Controlled Amortize Amplifier (Q27) will be amplified by Q26 and Q22. The amplified signal can generate TX Power of 4w by POWER AMPLIFIER (Q15 and Q9).

Before its arrival at the end of antenna, TX AMPLIFIER output signal passes through a Low Pass Filter network and a RX/TX conversion circuit which consists of D10, D11, D12 and D13. D10 and D11 open under the mode of transmitting and close under the mode of receiving.