

The first IF signal is amplified by Q113 and then enters IC102 (TA31136FN), where the signal is mixed again with the second local oscillator signal (50.4MHz) to become a 450KHz second IF signal. The second IF signal is then fed through a ceramic filter (N:

CF202; W: CF203) to eliminate unwanted signal. The resulting signal then is detected by IC102 and output from Pin9 as an AF signal.

2.4 AF Amplifier

The audio signal obtained from IC102 is amplified and filtered by IC402 before being amplified by IC401 (the received signalling inputted into CPU for decode). The processed signalling passes through Q405 (AF MUTE) and is amplified by IC405. The amplified signal is fed to K301 (volume control), Q511 (SP MUTE) before entering AF AMP (IC511). The outputted AF signal is then delivered to the speaker through control panel.

2.4 Squelch

The output AF signal from IC102 passes through IC102 Pin8 and is amplified by IC102 again, then is filtered and rectified to produce an ASQ level. The ASQ level is compared in CPU (IC502) to generate a level to control AF MUTE and SP MUTE. IC502 determines whether to output sounds from speaker by controlling Q405 and Q511.

3. Transmitter Circuit

The transmitter circuit is composed of MIC circuit, modulation circuit, RF driver, final power amplification circuit and APC circuit.

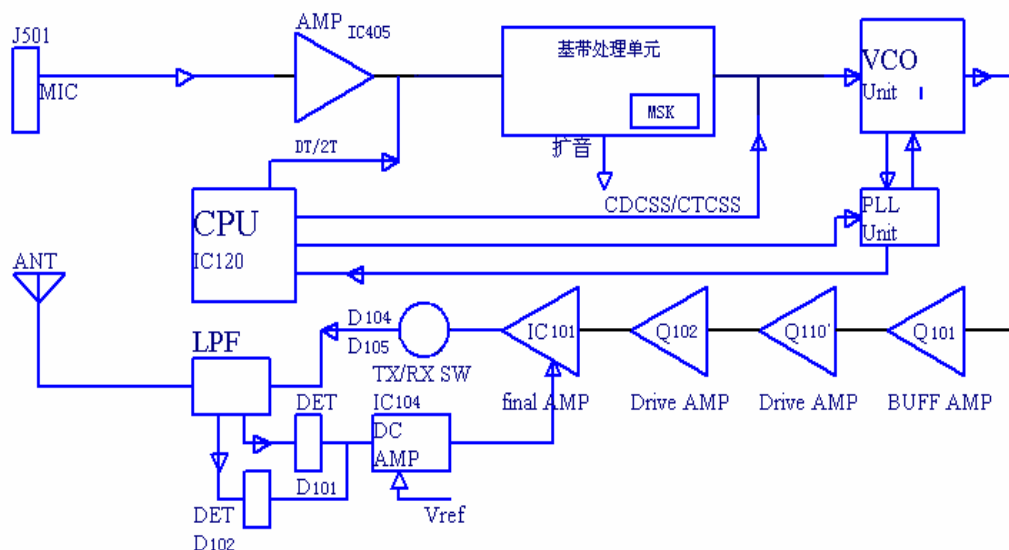


Fig 2 Transmitter Circuit

3.1 MIC and modulation circuit

The audio signal from MIC is amplified by IC405 before being pre-emphasized and encoded by IC401. The output audio is added into signalling and then is fed through VCO for modulation.

3.2 RF Driver and Final Power Amplification Circuit

The TX-RF signal outputted from Q703 in VCO circuit is amplified by Q101, driver Q110 and Q109, The amplified signal is then fed to IC101 (final PA) and passes through LPF

The control circuit is composed of CPU, reset IC and power supply control circuit.

5.1 CPU

IC502 (CPU) operates at 9.8304MHz. CPU controls the data transmission among E2PROM (IC501), Rx circuit, Tx circuit, control circuit, display circuit and peripheral circuit.

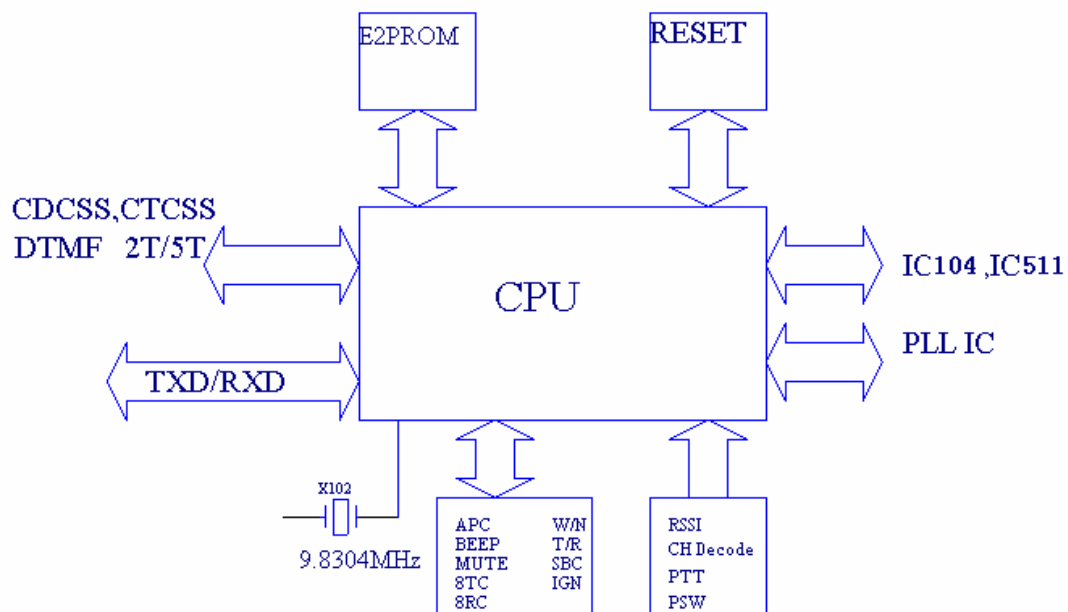


Fig 4 Control Circuit

5.2 Power Supply

Power supply of the radio is derived from the battery which supplies battery B+. D135 and D137 are over-voltage protection diodes. Power-on/off can be controlled by software.

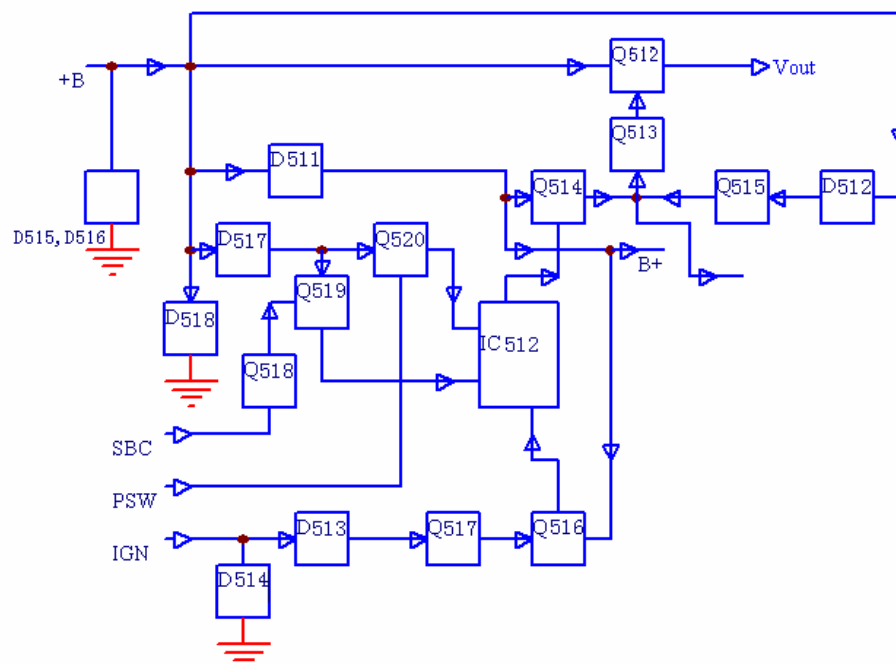


Fig 5 Power Supply Circuit

Vout provides power supply for IC601, IC602 and IC803, which produces 8V, 5V, 3.3V voltage to the circuit.

6. Display Circuit

Display circuit is comprised of CPU (IC502), LCD module, 8-segment numeric LED, LED and other components. Radio features are programmable by P1-P4. Data is displayed on the 8-segment LED in alphanumeric form.

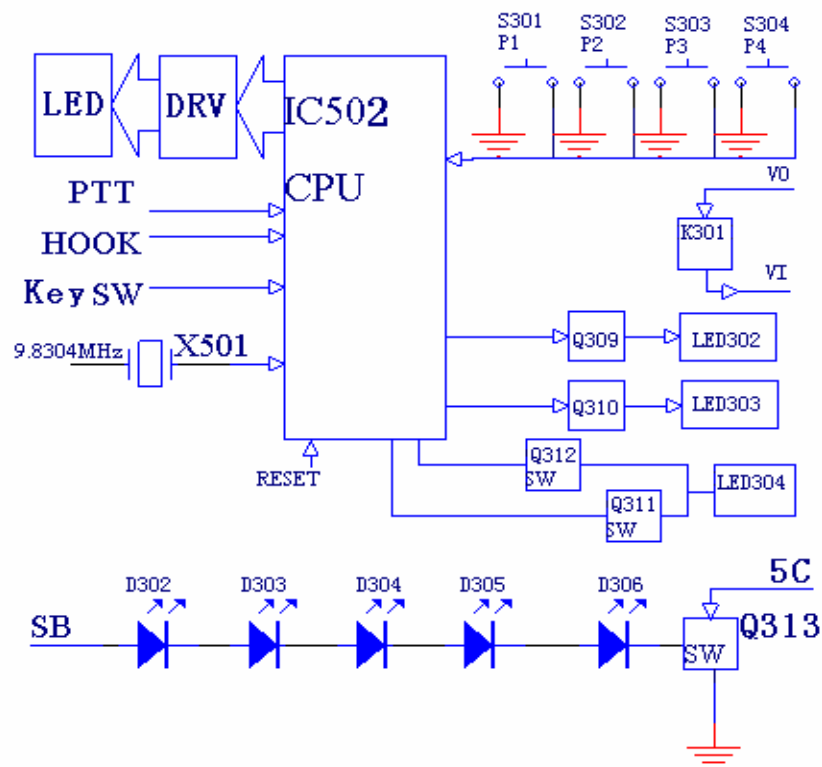


Fig6. Display Circuit