

## TRANSMIT SECTION

### Compressor

The audio signal from RCA jack (JK1 & JK2) feeds to the compressor U1. After the audio signal has been compressed, it delivers to the buffer amplifier (Q6) and pre-emphasis by a RC network (C2, R24 and R25). Then, the signal is routed to the voltage control oscillator (VCO) section.

### Auto Level Control (ALC)

To prevent the transmitter from over-modulation, U1 provided a built-in ALC circuitry. The ALC attack time and recovery time is control by C6. The ALC starting point is controlled by the potential divider R1 and R2.

### VOX detection

To detect if there is any signal presenting at the input terminal for the transmitting purpose, a VOX detection circuitry is built with Q5 and Q7. It amplifies the signal from the compressor output (pin 12) and direct feeds to the pin 11 of the MCU. When there is signal presenting at pin 11 of the MCU, it's output pin 20 goes high. It turns on the power supply of the RF transmitter section. After that it polls the data to the phase lock loop (PLL) IC U401 and starts the transmission.

### Oscillator and Modulator

The oscillation frequency is derived from a single 16MHz crystal by means of a phase locked loop (PLL). The voltage control oscillator (VCO) is formed by Q404; L404 and D401. Frequency modulation is provided by a varactor diode VD401 when the audio signal is applied through the resistor R460.

### RF Power Amplifier and switching circuitry

Q405 and Q406 are adopted as the power amplifier to drive the antenna through the low pass filter (L401, L402, C402, C403 and C450).