

Theory of transmitter for QP-650V1

Transmit audio and CTCSS/CDCSS Encoder

The audio signal from microphone is amplified, pre-emphasized, filtered, and then enters VCO for direct FM modulation.

CTC/CDC signaling produced by CTC_OUT (is generated by U611) pass a low pass filter and then enters VC-TCXO. CTC/CDC signaling produced by CTC_OUT pass a low pass filter and then mixed with audio signal before enters VCO.

The block diagram is shown as fig.1

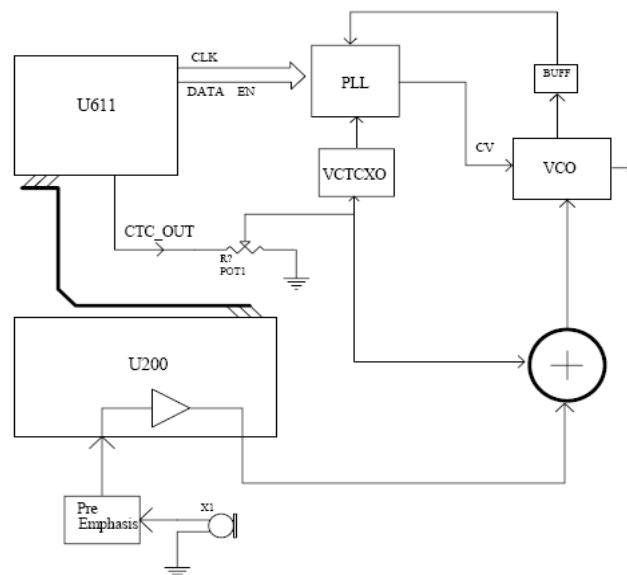


Fig.1

RF Power Amplifier

The transmit signal from VCO buffer amplifier is amplified by Q400 and Q401. The amplified signal is then amplified by the power amplifier Q402 and Q403 (including a two-stage FET amplifier) to create 5.0W RF power (see fig.2).

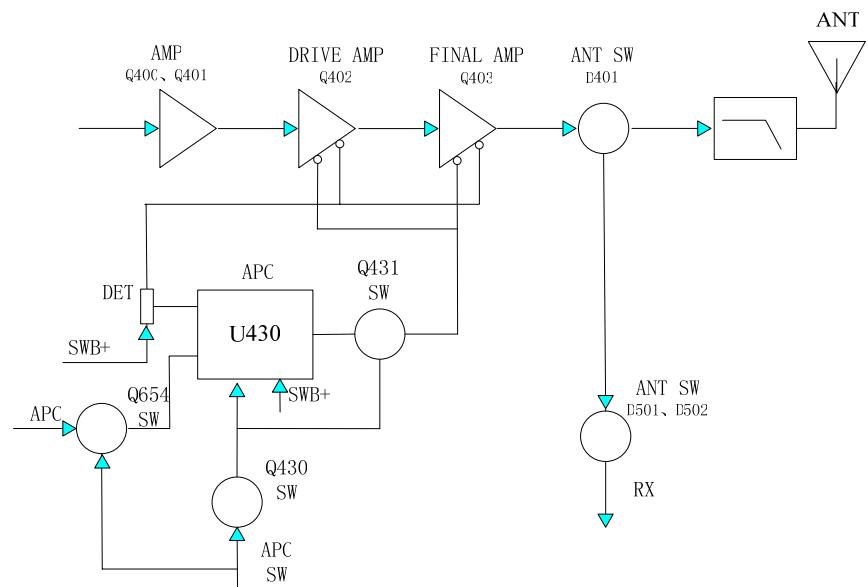


Fig.2

Antenna Switch and LPF

The RF amplifier output signal is passed through a low-pass filter network and a transmit/receive switch circuit before it is passed to the antenna terminal. The transmit/receive switch circuit is comprised of D401 and D502, D503. They are turned on in transmit mode and off in receive mode.