

CIRCUITS TO SUPPRESS SPURIOUS RADIATION, LIMIT MODULATION AND CONTROL POWER

1) VCO section

The oscillator circuit formed by L303, D305 and D306 generates transmitter frequencies. Then this signal is fed to the 3-stage of amplifiers, buffer amplifier Q302, pre-amplifier IC301 and post amplifier Q303 and lead to the final amplifier.

2) PLL section

Basically, the circuit description is the same as Rx. PLL IC inclusive with pre-scanner IC205 compares the phase between the VCO signal and reference oscillator frequency (12.00MHz) by method of dividing the frequency, and produces VCO control signal. Then this VCO control signal is fed to the charge pump, consisting of Q206, Q207 and Q208, and fed to the LPF. The supply voltage of charge pump is amplified by IC206 (approx. 15V) to achieve greater C/N ratio.

3) Modulator section

The modulation signal is fed to both VCO and the reference oscillator (TCVX0), this permits a very flat modulation characteristics against low frequency (DC). This is the advantage when KG510 is used for POCsag transmitter.

4) Tx younger section

The VCO signal is amplified by Q215 and Q216 to achieve 250mW. But VHF bands (136-174MHz) has only stage of amplifier Q215 to achieve 100mW.

5) PA section

The signal from younger stage is fed to PM510 and Q510 (VHF bands have no Q501) to achieve 50W output power. Then, signal is fed to the LPF to eliminate the harmonics spurious frequencies. An APC circuit formed by IC502, IC503, Q504 and Q505 stabilizes the output power at the set level. An IC501 protects PM501 and Q501 from the reverse power caused by the unmatched aerials.

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