

# MUSICAL ELECTRONICS LIMITED

GMRS1100B/EBC700

## Circuit Description:

### Transmitter Section:

#### Frequency Determining and Stabilizing Circuit:

U2 is Phase Lock Loop control circuit, X1 function as Main Reference oscillator of Phase Lock Loop circuit,

Q101, 102, 103, and D101 is Voltage Control Oscillator of Phase Lock Loop circuit for transmitter and receiver.

#### RF Amplification Circuit:

Q6, 7 and 9 is output amplifier of transmitter and output is fed to antenna. Such signal is taken from D7.. It is RF switch for VCO output from Phase Lock Loop circuit.

#### Circuits for Suppression of Spurious Radiation:

In addition to inter-stage filtering, the RF output of Q101,102 and 103 is coupled to antenna through a Low Pass

Filter network (L1,L2,L3,L17,C2,C3,C4,C5,C6,C7,C8,C82,C83) which serves both match and reduce harmonics to adequate level.

#### Modulation and circuit for Limiting modulation:

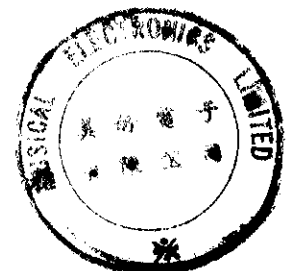
Q216,Q217,Q218,Q219,Q220 is microphone amplifier, it drive the modulation limiter Q215. The limited modulation signal is output to drive the modulator (Voltage Control Oscillator of Phase Lock Loop circuit).

### Receiver Section:

The receiver is a conventional double conversion super heterodyne with 1<sup>st</sup> local oscillation signal from Voltage Control Oscillator of Phase Lock Loop circuit (operating at frequency 21.7MHz below the receiving frequency) and 2<sup>nd</sup> local oscillation signal from Main Reference oscillator of Phase Lock Loop circuit.

The 1<sup>st</sup> IF frequency is 21.7MHz and the 2<sup>nd</sup> IF frequency is 450KHz.

Q1 and Q2 is RF amplifier, Q3 is 1<sup>st</sup> Mixer, Q4 is 1<sup>st</sup> IF amplifier, U1 is 2<sup>nd</sup> Mixer, 2<sup>nd</sup> IF, Discriminator and Squelch circuit.



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