Circuit Description

A . Power Supply

1. Operating Voltage - 3.7V (**rechargeable Li-ion battery**)
2. IC505 provides a regulated 3.3V for the circuitry to operate

B . Transmitter

1. Voltage Control Oscillator (VCO)

The Phase-lock-loop U1 & the Voltage-control-Oscillator which mainly consisted by Q507, Q508, D503 & L515 generates a steady frequency spectrum from 462.5500～467.7125MHZ of the FRS/GMRS band.

2. RF Amplifier

The VCO signal will then be coupled to the amplifier that consisted by Q9 & Q6. The amplified signal will pass through those Low-pass-filter L510、C528、…D502、C501 and finally coupled to the antenna ANT1 and radiated to the air.

3. .Audio frequency which picked from the microphone (MC1) will be amplified by U1 and filtered by the LPF and modulate to the VCO.

C . Receiver

1. The antenna (ANT1) picks up the radio frequency and pass it to the SAW filter FLT501 to filter those unwanted signal. The wanted signal will then be amplified by the Low-noise-amplifier Q501. The amplified signal will be fed into the Mixing circuitry. After mixing with the VCO signal, the first IF signal 21.4MHz will then be generated.

2. Intermediate Frequency

The 21.4MHz signal will pass through the 1st IF filter (FLT2) and goes into the IF IC (U1) to perform the 2nd mixing. 2nd mixed IF 450KHz will pass through the 2nd IF filter (FLT1) and goes into the demodulator (X3). The audio frequency is recovered.

3. Audio Amplifier

The demodulated AF from U1 pin 29 goes into the HPF (U1) will be amplified by U1 PIN56&PIN54 to drives the speaker.

(END)