

EXHIBIT N – Operational Description

Submitted with original application on 3-6-00

FCC ID M4D1010

## LCS TRANSMITTER DESCRIPTION

The transmitter is a four channel stereo FM transmitter operating in 905 - 925 Mhz frequency band. Microcontroller controls all the functions - reading the keypad, setting the volume (modulation depth), loading the synthesizers and displaying the channel number, volume settings and audio signal levels. Stereo audio signal from the audio source after the volume control circuitry goes to stereo modulator and then to synthesized VCO. Four modulated RF signals from VCO's combined together and amplified by the power amplifier. Following the amplifier is the low pass filter which suppress high order harmonics of the transmitted signal. Antenna is the modification of a resonant quarter-wavelength monopole. The transmitter is powered by 120 VAC and is grounded by the standard three conductor power cord.

## LCS RECEIVER DESCRIPTION

The receiver is built using double conversion superheterodine scheme and operate in 905-925 Mhz frequency band. First IF is 108.6 Mhz and the second IF is 10.7 Mhz. The microprocessor controls all the functions - reading the keypad, setting the volume, loading the synthesizers and displaying the receiving channel number. The demodulated stereo signal from the receiver goes to audio power amplifier and then to the headphones. The headphones cord is used as an antenna. The receiver is powered by a wall bug transformer.