EXHIBIT H – Operational Description

FCC ID# PYUDIAL4

Perception Analyzer Model 400 Handset
Description of Operation

The Handset and Console are part of perception analyzer system used in marketing research. A test subject uses a Handset unit with a potentiometer to "dial" or register their reaction to a marketing presentation. The console polls the handsets (a.k.a. "dial units") and receives back from the handset units data corresponding to each participant reaction.

Both the console and handset are essentially FM data transceivers and they both employ identical superheterodyne scheme receivers with 10.7 MHz IF. The handset data rate is 9.6 kBps and the deviation is set to 60 kHz pp. All the clock signals for the handset are derived from a single crystal reference oscillator 4.000 MHz with +/- 30ppm frequency stability. This defines tuning frequency accuracy. There are 6 operating frequencies 905, 908, 911, 914, 917 and 920 MHz. The handset and console are both operated at one frequency.

The transmit path includes synthesized RF oscillator, buffer and power amplifier. All those components are incorporated into transceiver IC. To suppress harmonics and reduce RF leak to antenna the low pass filter and transmit-receive switch are used. The handset uses a PCB loop antenna that is printed on the top side of the board .

All functions are controlled by microprocessor. When polled by a console, the handset responds back with the dial pot position or other service data. Also the service and maintenance commands such as battery voltage check and receive signal strength are incorporated. The power supply is a 5V linear regulator that is powered by 9V battery