940 South Park Lane Ste.2
Tempe, AZ 85282

AquaviZor Functional Description

Date: August 16, 2005

Device Description: Pool Water Monitor
The device measures the pH, ORP, and Temperature of a pool or spa and transmits the information wirelessly to a remote display unit. The display unit incorporates microprocessor intelligence that processed the raw sensor information and compares it to established limits and user entered specifics for the body of water being monitored. The information display will indicate that the 'Pool is Ok' when values are within recognized limits, and will recommend addition of chemistry when the values of pH or ORP fall outside the standard ranges.

Name: AquaviZor 1000 (Pool Water Monitor)

Markets: USA (initial), Canada, South America, Europe, and Australia (secondary)

Technical:
The units will be used in household and commercial applications.
The sending unit floats in a pool or spa, and is battery powered
The receiving unit has an LCD display and is powered by a wall AC adapter
Both have microprocessors.
Clock frequency – sending unit: 3MHz active, 32 KHz sleep
Clock frequency – receiving unit: 12MHz, always active
Both units operate on 5V supplies – sending unit 4.5V (3 "D" cells) – receiving unit 5V regulated
Transmission frequency 433.92 MHz
Carrier On/Off method

Function: (Monitoring Mode)
The sending unit hibernates in a sleep mode most of the time.
It will wake at approximately 1 minute intervals, measure the parameters with the microprocessor, transmit the data for approximately 900 ms and then return to the hibernation state to conserve battery power.
The average power is very low since the transmit interval is so short compared to the off period.

Function: (Initial Communications Mode)
When power is applied to the sending unit for the first time, it will enter a mode of more frequent transmission for the first 30 minutes of operation.
The unit will transmit for 900 ms every 35 seconds to maximize the opportunity for the receiver to acquire the transmission and establish an exclusive pairing relationship. This mode ends one half hour after power has been applied to the sending unit.

Physical Description:
Sending unit is approximately 20” tall (See Figure #1)

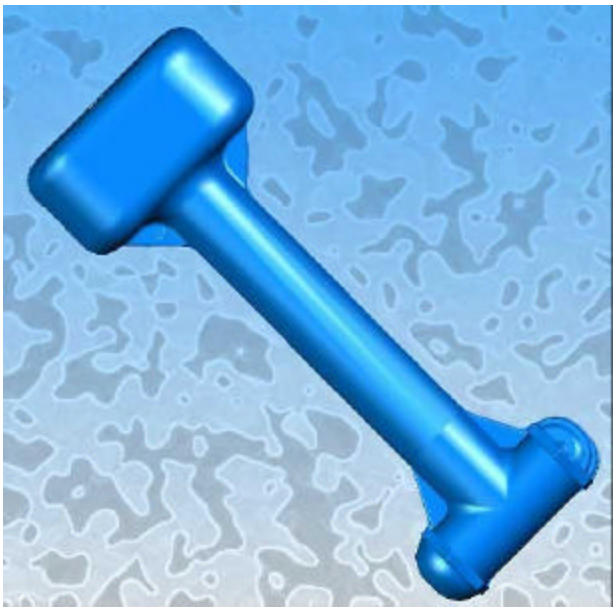

Figure #1

Receiving unit is a 5” square enclosure (See Figure #2)

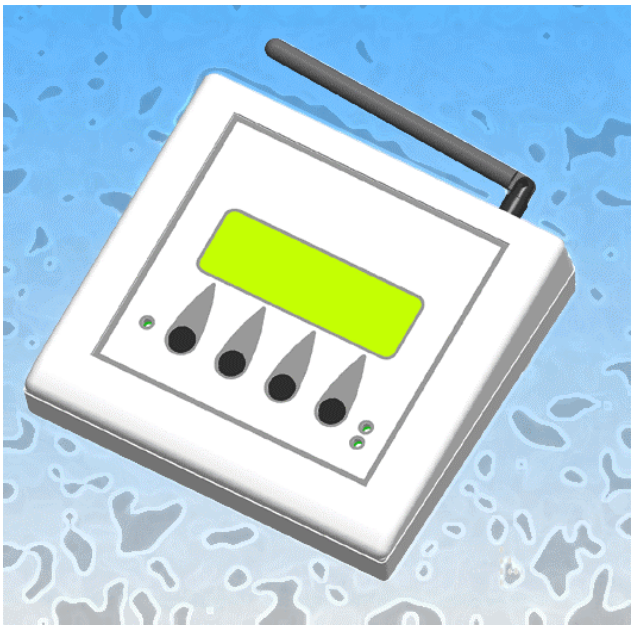

Figure #2