General

The ZW2 is a frequency hopping spread spectrum transmitter operating in the frequency band of 902 MHz to 928 MHz with 0.200 watts or less of output power. Per table 1 of 1.1307, paragraphs 1.1310 and 2.1091 of CFR 47, evaluation for this device is as follows. Due to the location of the antenna, normal operating conditions and use, the unit will satisfy the requirements for RF Exposure. Calculations are made here for completeness.

Operating configuration and exposure conditions

The unit is to be placed on a scorekeeper's tabletop positioned at least 20 cm from the operator. The keypad positioned toward the operator places the radiating antenna away from the user maintaining the 20 cm separation distance. The controller handle gives the user additional separation from the unit.

Calculated general population / uncontrolled exposure

Per 1.1310, the requirement for power density in general population/uncontrolled exposure is f/1500, which equates to 0.6 mW/cm^2 calculated for 915 MHz. This amount to be averaged over a time period of 30 minutes. The inherent design and use of this product places the antenna at a distance grater than the 20 cm used for this calculation. The 20 cm distance was used to show compliance only.

$S = PG/(4\pi R^2)$

Where S = power density in mw/cm^2; P = input power to antenna in mw; G = power gain of antenna; and
R = distance from antenna in cm; pi = 3.14159.

For a minimum distance of 20 centimeters and 0.200 watts (200 mW) operation with the supplied antenna with a maximum gain of 1.64, S is calculated as 0.0653 mw/cm^2. $S = 200(1.64)(4\pi (20)^2) = 0.0653$ mw/cm^2

This is well within the 0.6 mW/cm^2 limit prescribed for general population/uncontrolled exposure as prescribed by CFR 47 paragraph 1.1310.