

RF Exposure Exhibit for Digi-Code, Inc. OWM-ZD433

Portable Devices are defined as a transmitting device designed to be used so that the radiating structure(s) of the device is in contact with the body of the user or nearby persons. Therefore, this device is classified under section 2.1093 as a “portable” device.

Although this device is categorically excluded from RF exposure evaluation under Part 2, it can be shown that the device meets the limits used for evaluating other devices (those which are not excluded) under this section. Section 2.1093(d-2) for portable devices state that the limits for general population/uncontrolled exposure is .08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as average over any 1 gram of tissue.

The FCC OET Bulletin 65 Section 2 can be used to determine compliance with guidelines for human exposure to RF radiation. We will use equation 3 of that section for predicting RF fields.

$$S = \frac{PG}{4\pi R^2}$$

S = power density (units e.g. mW/cm²)

P = power into to the antenna (or power output) (units e.g. mW)

G = power gain of the antenna (worst case = 1)

R = distance to the center of antenna (units e.g. cm)

The highest power measurement for this device is 61.6 dBuV.

For this prediction we will use a worst-case power of –45.4 dBm or 28.8 nW.

Since the device is “portable”, we will use a worst-case distance of .15 cm.

For worst-case antenna gain, we will use a gain of one.

Using equation 3 of OET Bulletin 65 Section 2, the power density is calculated to be 0.000102053486 mW/cm². This is well within the limit given in 2.1093 (d-2).