

RF Exposure Exhibit for RF Technologies KXU-SEEK01 RFID Tag

Since the EUT only transmits when it receives a signal from the Hand Held Unit, during normal operation the user would not be touching the Seeker Tag. There are no buttons on the device to make it transmit. This means a distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure and the body of the user or nearby persons. Therefore, this device is classified under section 2.1091 as a "mobile" 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 2.1091 for mobile devices state that the limits are given in 1.1310. The limit given in 1.1310 for general population/uncontrolled at 433.9164 MHz is a Maximum Permissible Exposure (MPE) limit of $(f/1500) \text{ mW/cm}^2$.

For 433.9164 MHz this limit is 0.2893 mW/cm².

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.

The highest power measurement for this device is -25.8 dBm.

For this prediction we will use a worst-case power of -25 dBm or .003 nW.

Since the device is "mobile", we will use a worst-case distance of 20 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 0.000000629 mW/cm². This is well within the limit given in 1.1310.