

MPE Calculations

Calculations were made using equation 3 under Prediction Methods of OET Bulletin 65, Edition 97-01 as an aid. The equation is displayed below for convenience. The equation over-predicts the power density of the near field and can therefore be considered a worst-case prediction. The calculations were then compared to Table 1 of FCC §1.1310 which displays the limits for specific absorption rates (SAR) per frequency range to evaluate the impact radio frequency has on humans. Since the U5X-REHP1AZ0 device is considered a portable device, the provisions must be evaluated according to provision in FCC §2.1093.

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

S = Power Density, P = Power to antenna, G = Antenna Gain, R = Radiation Radius

The U5X-REHP1AZ0 has an output power of 4.5 mW. Only one antenna is active at any time, so the antenna with the highest gain was used, which has a maximum gain of 3.3dBi. Therefore, a numerical gain of 2.14 is used in the equation below. The distance was predicted to be at least 20 cm from a user since the device is meant to be mounted on a wall of a residence.

$$S = \frac{(4.5mW)(2.14)}{4\pi(20cm)^2} = 0.00192 mW/cm^2 < 1.0 mW/cm^2$$

The result is well below the limit of 1.0 mW/cm². Therefore, the U5X-REHP1AZ0 is compliant with FCC limit for general population/uncontrolled exposure.

Sincerely,



Paul Saldin
Vice President
Resolution Products, Inc.