

Prediction of MPE limit at a given distance

Project number: 400858
Applicant: Kontron Canada, Inc.
Product: Wireless Gateway
Model: WPEB-263ACNI(BT)
Operating mode: LTE, 2500 group

Fundamental transmit (prediction) frequency: 2310 MHz
Maximum measured conducted peak output power: 23.80 dBm
Cable and/or jumper loss: 0.0 dB
Maximum peak power at antenna input terminal: 23.80 dBm
Tx On time: 1.000 ms
Tx period time: 1.000 ms
Average factor: 100 %
Maximum calculated average power at antenna input terminal: 239.883 mW
Single Antenna gain (typical): 2 dBi
Number of antennae: 1
Total system gain (typical): 2 dBi
MPE limit for uncontrolled exposure at prediction frequency: 1 mW/cm²
10 W/m²
Minimum calculated prediction distance for compliance: 6 cm
Typical (declared) distance: 20 cm
Average power density at prediction frequency: 0.075636 mW/cm²
0.75636 W/m²
Margin of Compliance: 11.21270 dB
Maximum allowable antenna gain: 13.21270 dBi

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

where: S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna