

DTS MPE CALCULATIONS

The following MPE calculations are based on a measured conducted RF power of 20.0dBm at 2437MHz and 18.9dBm at 5745MHz as presented to the antenna. The peak antenna gain in the 2.4GHz band is 4.1dBi and 5.5dBi in the 5.7GHz band.

13.1 2400 to 2483.5 MHz Band

Prediction of MPE limit at a given distance

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

Maximum peak output power at antenna input terminal: 20.00 (dBm)

Maximum peak output power at antenna input terminal: 100.000 (mW)

Antenna gain(typical): 4.1 (dBi)

Maximum antenna gain: 2.570 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2437 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at prediction frequency: 0.051136 (mW/cm²)

Maximum allowable antenna gain: 17.0 (dBi)

Margin of Compliance at 20 cm = 12.9 dB

13.2 5725 to 5850 MHz Band

Prediction of MPE limit at a given distance

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

Maximum peak output power at antenna input terminal: 18.90 (dBm)

Maximum peak output power at antenna input terminal: 77.625 (mW)

Antenna gain(typical): 5.5 (dBi)

Maximum antenna gain: 3.548 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 5745 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at prediction frequency: 0.054794 (mW/cm²)

Maximum allowable antenna gain: 18.1 (dBi)

Margin of Compliance at 20 cm = 12.6 dB