

5.2 Exposure Evaluation

Worst case: 18.1 dBm at 2437 MHz with a 1 dBi antenna gain (Calculations only performed for this antenna).

FCC

MPE calculation per KDB 447498:

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: 18.10 (dBm)

Maximum peak output power at antenna input terminal: 64.565 (mW)

Antenna gain(peak): 1 (dBi)

Maximum antenna gain: 1.259 (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: 0.016171 (mW/cm²)

Maximum allowable antenna gain: 18.9 (dBi)

ISED

Per RSS-102, Section 2.5.2, to be exempt from routine evaluation:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

Since 18.1 dbm = 64.6 mW is less than $0.0131 * (2437)^{0.6834} = 2.7$ W, the EUT is exempt from routine evaluation.

6 REVISION HISTORY

Version	Date	Notes	Person
0	10/9/2020	First Draft	Shane Dock
1	10/9/2020	Final Draft	Shane Dock

END OF REPORT