

APPENDIX D: RF EXPOSURE / MPE CALCULATION

The EUT operates in an occupational/controlled exposure environment.

The frequency range for the EUT is 450 – 490 MHz; 470 MHz is used for the MPE calculation below. Per 1.1310 Table 1, the maximum power density allowed for the EUT is $f / 300 = 470 / 300 = 1.57 \text{ mW/cm}^2$

The antenna is a half-wave dipole with gain of 2.15 dBi (1.64 numeric).

The manufacturer's rated power of the EUT is 25 +/- 1 W. The EUT as supplied had a measured conducted power of 25.8 W. The MPE distance is also calculated at 26 W to present the worst case MPE distance. The EUT has a maximum 50% duty cycle; this factor has been applied to the power in the following table.

MPE is calculated per the following equation (solving for d):

$$S = (P \times G) / (4 \times \pi \times d^2)$$

where:

S = power density

P = transmitter conducted power in (W)

G = antenna numeric gain

d = distance to radiation center (m)

Power Notes	Antenna Numeric Gain	Conducted Power (W)	Minimum Separation Distance (m)	Minimum Separation Distance (cm)
EUT as supplied	1.64	12.9	0.327	32.7
Manufacturer's maximum power rating	1.64	13.0	0.329	32.9