

# RF Exposure Statement

## 1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

### (B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f <sup>2</sup> )	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....	.....	.....	f/1500	30
1500 - 100.000.....	.....	.....	1.0	30

F = frequency in MHz

\* = Plane-wave equivalent power density

## 2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

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

$$S = PG/4\pi R^2$$

S = Power density

P = power input to 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

**2-1. Ant 0 802.11a BAND**

Max Peak output Power at antenna input terminal (dBm)	13.39000
Max Peak output Power at antenna input terminal (mW)	21.82730
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5240.00000
Antenna Gain(typical) (dBi)	1.90000
Antenna Gain(numeric)	1.54882
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.006726
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

**2-2. Ant 0 802.11n\_20MHz BAND**

Max Peak output Power at antenna input terminal (dBm)	13.36000
Max Peak output Power at antenna input terminal (mW)	21.67704
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5240.00000
Antenna Gain(typical) (dBi)	1.90000
Antenna Gain(numeric)	1.54882
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.006679
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

**2-3. Ant 0 802.11n\_40MHz BAND**

Max Peak output Power at antenna input terminal (dBm)	6.48000
Max Peak output Power at antenna input terminal (mW)	4.44631
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5190.00000
Antenna Gain(typical) (dBi)	1.90000
Antenna Gain(numeric)	1.54882
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.001370
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

**2-4. Ant 1 802.11a BAND**

Max Peak output Power at antenna input terminal (dBm)	13.05000
Max Peak output Power at antenna input terminal (mW)	20.18366
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5200.00000
Antenna Gain(typical) (dBi)	1.86000
Antenna Gain(numeric)	1.53462
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.006162
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

**2-5. Ant 1 802.11n\_20MHz BAND**

Max Peak output Power at antenna input terminal (dBm)	12.88000
Max Peak output Power at antenna input terminal (mW)	19.40886
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5200.00000
Antenna Gain(typical) (dBi)	1.86000
Antenna Gain(numeric)	1.53462
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.005926
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

**2-6. Ant 1 802.11n\_40MHz BAND**

Max Peak output Power at antenna input terminal (dBm)	5.63000
Max Peak output Power at antenna input terminal (mW)	3.65595
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5230.00000
Antenna Gain(typical) (dBi)	1.86000
Antenna Gain(numeric)	1.53462
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.001116
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.00000

### 3. RESULTS

The power density level at 20 cm is 0.006726 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 0 802.11a BAND band.

The power density level at 20 cm is 0.006679 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 0 802.11n\_20MHz BAND

The power density level at 20 cm is 0.001370 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 0 802.11n\_40MHz BAND.

The power density level at 20 cm is 0.006162 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 1 802.11a BAND.

The power density level at 20 cm is 0.005926 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 1 802.11n\_20MHz BAND.

The power density level at 20 cm is 0.001116 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 1.0 mW/cm<sup>2</sup> at Ant 1 802.11n\_40MHz BAND