

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 ²)	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f ²)	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

3. DTS Ant1 and Ant 2

3-1. 802.11g (2.4GHz)

Max Peak output Power at antenna input terminal (dBm)	28.58
Max Peak output Power at antenna input terminal (mW)	721.107
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	2462.00000
Antenna Gain(typical) (dBi)	5.12200
Antenna Gain(numeric)	3.25237
Power density at prediction frequency (mW/cm ²)	0.466584
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-2. 802.11n (2.4 GHz)

Max Peak output Power at antenna input terminal (dBm)	28.73
Max Peak output Power at antenna input terminal (mW)	746.449
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	2437.00000
Antenna Gain(typical) (dBi)	2.11300
Antenna Gain(numeric)	1.62667
Power density at prediction frequency (mW/cm ²)	0.241563
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-3 802.11a(5745 ~ 5825 MHz)

Max Peak output Power at antenna input terminal (dBm)	26.53
Max Peak output Power at antenna input terminal (mW)	449.780
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5745.00000
Antenna Gain(typical) (dBi)	6.27300
Antenna Gain(numeric)	4.23936
Power density at prediction frequency (mW/cm ²)	0.379341
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-4 802.11n 20MHz BW (5745 ~5825 MHz)

Max Peak output Power at antenna input terminal (dBm)	26.91
Max Peak output Power at antenna input terminal (mW)	490.908
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5825.00000
Antenna Gain(typical) (dBi)	3.28000
Antenna Gain(numeric)	2.12814
Power density at prediction frequency (mW/cm ²)	0.207840
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-5 802.11n_40MHz BW(5755~5795 MHz)

Max Peak output Power at antenna input terminal (dBm)	23.73
Max Peak output Power at antenna input terminal (mW)	236.048
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5795.00000
Antenna Gain(typical) (dBi)	3.28000
Antenna Gain(numeric)	2.12814
Power density at prediction frequency (mW/cm ²)	0.099938
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-6 802.11ac_20MHz BW (5745~ 5825 MHz)

Max Peak output Power at antenna input terminal (dBm)	26.61
Max Peak output Power at antenna input terminal (mW)	458.142
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5745.00000
Antenna Gain(typical) (dBi)	3.28000
Antenna Gain(numeric)	2.12814
Power density at prediction frequency (mW/cm ²)	0.193968
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-7 802.11ac 40MHz BW (5755~ 5795 MHz)

Max Peak output Power at antenna input terminal (dBm)	23.72
Max Peak output Power at antenna input terminal (mW)	235.505
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5755.00000
Antenna Gain(typical) (dBi)	3.28000
Antenna Gain(numeric)	2.12814
Power density at prediction frequency (mW/cm ²)	0.099708
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-8 802.11ac 80MHz BW (5755MHz)

Max Peak output Power at antenna input terminal (dBm)	20.21
Max Peak output Power at antenna input terminal (mW)	104.954
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5775.00000
Antenna Gain(typical) (dBi)	3.28000
Antenna Gain(numeric)	2.12814
Power density at prediction frequency (mW/cm ²)	0.044436
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4. UNII Ant1 and Ant 2

4-1 802.11a (5180~5240 MHz)

Max Peak output Power at antenna input terminal (dBm)	14.59
Max Peak output Power at antenna input terminal (mW)	28.774
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5240.00000
Antenna Gain(typical) (dBi)	5.72300
Antenna Gain(numeric)	3.73508
Power density at prediction frequency (mW/cm ²)	0.021381
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-2 802.11n 20MHz BW (5180~5240 MHz)

Max Peak output Power at antenna input terminal (dBm)	14.85
Max Peak output Power at antenna input terminal (mW)	30.549
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5180.00000
Antenna Gain(typical) (dBi)	2.71600
Antenna Gain(numeric)	1.86896
Power density at prediction frequency (mW/cm ²)	0.011359
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-3 802.11n 40MHz BW(5190~5230 MHz)

Max Peak output Power at antenna input terminal (dBm)	16.81
Max Peak output Power at antenna input terminal (mW)	47.973
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5230.00000
Antenna Gain(typical) (dBi)	2.71600
Antenna Gain(numeric)	1.86896
Power density at prediction frequency (mW/cm ²)	0.017837
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-4 802.11ac 20MHz BW(5180~5240 MHz)

Max Peak output Power at antenna input terminal (dBm)	14.62
Max Peak output Power at antenna input terminal (mW)	28.973
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5180.00000
Antenna Gain(typical) (dBi)	2.71600
Antenna Gain(numeric)	1.86896
Power density at prediction frequency (mW/cm ²)	0.010773
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-5 802.11ac 40MHz BW(5190~5230 MHz)

Max Peak output Power at antenna input terminal (dBm)	16.35
Max Peak output Power at antenna input terminal (mW)	43.152
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5230.00000
Antenna Gain(typical) (dBi)	2.71600
Antenna Gain(numeric)	1.86896
Power density at prediction frequency (mW/cm ²)	0.016045
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-6 802.11ac 80MHz BW(5210 MHz)

Max Peak output Power at antenna input terminal (dBm)	12.77
Max Peak output Power at antenna input terminal (mW)	18.923
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5210.00000
Antenna Gain(typical) (dBi)	2.71600
Antenna Gain(numeric)	1.86896
Power density at prediction frequency (mW/cm ²)	0.007036
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5. RESULTS

DTS Ant1 and Ant2

1. The power density level at 20 cm is **0.466584 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11g(2.4GHz) BAND**
2. The power density level at 20 cm is **0.241563 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11n(2.4GHz) BAND**
3. The power density level at 20 cm is **0.379341 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5745~5825 MHz) BAND**
4. The power density level at 20 cm is **0.207840 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11n_20MHz BW(5745~5825 MHz) BAND**
5. The power density level at 20 cm is **0.099938 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11n_40MHz BW(5755~5795 MHz) BAND**
6. The power density level at 20 cm is **0.193968 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11ac_20MHz BW(5745~5825 MHz) BAND**
7. The power density level at 20 cm is **0.099708 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11ac_40MHz BW(5755~5895 MHz) BAND**
8. The power density level at 20 cm is **0.044436 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11ac_80MHz BW(5755 MHz) BAND**

UNII Ant1 and Ant2

1. The power density level at 20 cm is **0.021381 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5180~5240) BAND**
2. The power density level at 20 cm is **0.011359 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11n (5180~5240) BAND**
3. The power density level at 20 cm is **0.017837 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5190~5230 MHz) BAND**
4. The power density level at 20 cm is **0.010773 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_20MHz BW(5180~5240 MHz) BAND**
5. The power density level at 20 cm is **0.016045 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_40MHz BW(5190~5230 MHz) BAND**
6. The power density level at 20 cm is **0.007036 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_80MHz BW(5210 MHz) BAND.**