

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. Monitoring Ant1 and Ant 2

3-1. 802.11a (5260 ~ 5320)

Max Peak output Power at antenna input terminal (dBm)	9.84
Max Peak output Power at antenna input terminal (mW)	9.638
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5300.00000
Antenna Gain(typical) (dBi)	8.51000
Antenna Gain(numeric)	7.09578
Power density at prediction frequency (mW/cm ²)	0.013606
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-2. 802.11a(5500~5700)

Max Peak output Power at antenna input terminal (dBm)	9.21
Max Peak output Power at antenna input terminal (mW)	8.337
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	8.51000
Antenna Gain(numeric)	7.09578
Power density at prediction frequency (mW/cm ²)	0.011769
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-3 802.11n 20MHz BW(5260~5320)

Max Peak output Power at antenna input terminal (dBm)	9.57
Max Peak output Power at antenna input terminal (mW)	9.057
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5320.00000
Antenna Gain(typical) (dBi)	5.50000
Antenna Gain(numeric)	3.54813
Power density at prediction frequency (mW/cm ²)	0.006393
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-4 802.11n 20MHz BW(5500~5700)

Max Peak output Power at antenna input terminal (dBm)	9.04
Max Peak output Power at antenna input terminal (mW)	8.017
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	5.50000
Antenna Gain(numeric)	3.54813
Power density at prediction frequency (mW/cm ²)	0.005659
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-5 802.11n 40MHz BW(5270~5310)

Max Peak output Power at antenna input terminal (dBm)	8.65
Max Peak output Power at antenna input terminal (mW)	7.328
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5310.00000
Antenna Gain(typical) (dBi)	5.50000
Antenna Gain(numeric)	3.54813
Power density at prediction frequency (mW/cm ²)	0.005173
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3-6 802.11n 40MHz BW (5510~5670)

Max Peak output Power at antenna input terminal (dBm)	7.84
Max Peak output Power at antenna input terminal (mW)	6.081
Prediction distance (cm)	20.000
Prediction frequency (MHz)	5590.000
Antenna Gain(typical) (dBi)	5.500
Antenna Gain(numeric)	3.54813
Power density at prediction frequency (mW/cm ²)	0.004293
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4. Service Ant1 and Ant 2

4-1 802.11a (5260~5320)

Max Peak output Power at antenna input terminal (dBm)	11.48
Max Peak output Power at antenna input terminal (mW)	14.060
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5260.00000
Antenna Gain(typical) (dBi)	9.01000
Antenna Gain(numeric)	7.96159
Power density at prediction frequency (mW/cm ²)	0.022271
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-2 802.11a(5500~5700)

Max Peak output Power at antenna input terminal (dBm)	6.22
Max Peak output Power at antenna input terminal (mW)	4.188
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	9.01000
Antenna Gain(numeric)	7.96159
Power density at prediction frequency (mW/cm ²)	0.006633
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-3 802.11n 20MHz BW(5260~5320)

Max Peak output Power at antenna input terminal (dBm)	11.29
Max Peak output Power at antenna input terminal (mW)	13.459
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5260.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.010659
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-4 802.11n 20MHz BW(5500~5700)

Max Peak output Power at antenna input terminal (dBm)	6.11
Max Peak output Power at antenna input terminal (mW)	4.083
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.003234
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-5 802.11n 40MHz BW(5270~5310)

Max Peak output Power at antenna input terminal (dBm)	13.14
Max Peak output Power at antenna input terminal (mW)	20.606
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5270.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.016320
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

4-6 802.11n 40MHz BW(5510~5670)

Max Peak output Power at antenna input terminal (dBm)	7.35
Max Peak output Power at antenna input terminal (mW)	5.433
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5590.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.004303
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5. Service Ant1 and Ant 2 and Ant 3

5-1 802.11a (5260~5320)

Max Peak output Power at antenna input terminal (dBm)	13.43
Max Peak output Power at antenna input terminal (mW)	22.029
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5260.00000
Antenna Gain(typical) (dBi)	10.77000
Antenna Gain(numeric)	11.93988
Power density at prediction frequency (mW/cm ²)	0.052328
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5-2 802.11a (5500~5700)

Max Peak output Power at antenna input terminal (dBm)	8.10
Max Peak output Power at antenna input terminal (mW)	6.457
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	10.77000
Antenna Gain(numeric)	11.93988
Power density at prediction frequency (mW/cm ²)	0.015337
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5-3 802.11n 20MHz BW(5260~5320)

Max Peak output Power at antenna input terminal (dBm)	13.25
Max Peak output Power at antenna input terminal (mW)	21.135
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5260.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.016739
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5-4 802.11n 20MHz BW(5500~5700)

Max Peak output Power at antenna input terminal (dBm)	7.94
Max Peak output Power at antenna input terminal (mW)	6.223
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5600.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.004929
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5-5 802.11n 40MHz BW(5270~5310)

Max Peak output Power at antenna input terminal (dBm)	15.02
Max Peak output Power at antenna input terminal (mW)	31.769
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5270.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.025161
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

5-6 802.11n 40MHz BW(5510~5670)

Max Peak output Power at antenna input terminal (dBm)	9.19
Max Peak output Power at antenna input terminal (mW)	8.299
Prediction distance (cm)	20.00000
Prediction frequency (MHz)	5590.00000
Antenna Gain(typical) (dBi)	6.00000
Antenna Gain(numeric)	3.98107
Power density at prediction frequency (mW/cm ²)	0.006572
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

3. RESULTS

Monitoring Ant1 and Ant2

1. The power density level at 20 cm is **0.013606 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5260~5320) BAND**
2. The power density level at 20 cm is **0.011769 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5500~5700) BAND**
3. The power density level at 20 cm is **0.006393 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5260~5320) BAND**
4. The power density level at 20 cm is **0.005659 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5500~5700) BAND**
5. The power density level at 20 cm is **0.005173 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5270~5310) BAND**
6. The power density level at 20 cm is **0.004293 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5510~5670) BAND**

Service Ant1 and Ant2

1. The power density level at 20 cm is **0.022271 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5260~5320) BAND**
2. The power density level at 20 cm is **0.006633 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5500~5700) BAND**
3. The power density level at 20 cm is **0.010659 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5260~5320) BAND**
4. The power density level at 20 cm is **0.003234 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5500~5700) BAND**
5. The power density level at 20 cm is **0.016320 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5270~5310) BAND**
6. The power density level at 20 cm is **0.004303 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5510~5670) BAND.**

Service Ant1 and Ant2 and Ant3

1. The power density level at 20 cm is **0.052328 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5260~5320) BAND**
2. The power density level at 20 cm is **0.015337 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5500~5700) BAND**
3. The power density level at 20 cm is **0.016739 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5260~5320) BAND**
4. The power density level at 20 cm is **0.004929 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5500~5700) BAND**
5. The power density level at 20 cm is **0.025161 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5270~5310) BAND**
6. The power density level at 20 cm is **0.006572 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5510~5670) BAND**