

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. RESULTS (DTS BAND)

Monitoring port

3-1. 2.4 GHz BAND

Max Peak output Power at antenna input terminal (dBm)	25.7500
Max Peak output Power at antenna input terminal (mW)	375.8374
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	2437.0000
Antenna Gain(typical) (dBi)	6.3900
Antenna Gain(numeric)	4.3551
Power density at prediction frequency (mW/cm ²)	0.0521
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

3-2. 5.8 GHz BAND

Max Peak output Power at antenna input terminal (dBm)	21.3500
Max Peak output Power at antenna input terminal (mW)	136.4583
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5825.0000
Antenna Gain(typical) (dBi)	11.2300
Antenna Gain(numeric)	13.2739
Power density at prediction frequency (mW/cm ²)	0.0577
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

Service port3-3. 2.4 GHz BAND

Max Peak output Power at antenna input terminal (dBm)	25.0500
Max Peak output Power at antenna input terminal (mW)	319.8895
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	2462.0000
Antenna Gain(typical) (dBi)	10.2600
Antenna Gain(numeric)	10.6170
Power density at prediction frequency (mW/cm ²)	0.1081
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

3-4. 5.8 GHz BAND

Max Peak output Power at antenna input terminal (dBm)	25.2600
Max Peak output Power at antenna input terminal (mW)	335.7376
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5755.0000
Antenna Gain(typical) (dBi)	10.2600
Antenna Gain(numeric)	10.6170
Power density at prediction frequency (mW/cm ²)	0.1135
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4. RESULTS (UNII 1 BAND)

Monitoring Port

4-1 802.11a (5180 ~5240)

Max Peak output Power at antenna input terminal (dBm)	8.2500
Max Peak output Power at antenna input terminal (mW)	6.6834
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5180.0000
Antenna Gain(typical) (dBi)	11.8600
Antenna Gain(numeric)	15.3462
Power density at prediction frequency (mW/cm ²)	0.0033
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

Service Port

4-2 802.11a (5180~5240)

Max Peak output Power at antenna input terminal (dBm)	9.7200
Max Peak output Power at antenna input terminal (mW)	9.3756
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5240.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0038
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4-3 802.11n 20MHz BW(5180 ~ 5240)

Max Peak output Power at antenna input terminal (dBm)	9.6900
Max Peak output Power at antenna input terminal (mW)	9.3111
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5200.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0038
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

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

Max Peak output Power at antenna input terminal (dBm)	11.6400
Max Peak output Power at antenna input terminal (mW)	14.5881
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5190.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0059
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4-5 802.11ac 20 MHz BW (5180 ~ 5240)

Max Peak output Power at antenna input terminal (dBm)	9.8900
Max Peak output Power at antenna input terminal (mW)	9.7499
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5180.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0039
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4-6 802.11ac 40MHz BW (5190~5230)

Max Peak output Power at antenna input terminal (dBm)	11.0700
Max Peak output Power at antenna input terminal (mW)	12.7938
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5190.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0052
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4-7 802.11ac_80MHz BW (5210)

Max Peak output Power at antenna input terminal (dBm)	10.0000
Max Peak output Power at antenna input terminal (mW)	10.0000
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5210.0000
Antenna Gain(typical) (dBi)	11.0400
Antenna Gain(numeric)	12.7057
Power density at prediction frequency (mW/cm ²)	0.0040
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5. RESULTS (UNII 2A, 2C BAND)Monitoring Port5-1 802.11a (5260~5320) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	16.9800
Max Peak output Power at antenna input terminal (mW)	49.8884
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5260.0000
Antenna Gain(typical) (dBi)	11.8100
Antenna Gain(numeric)	15.1705
Power density at prediction frequency (mW/cm ²)	0.0241
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-2 802.11a (5500~5720) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	16.7900
Max Peak output Power at antenna input terminal (mW)	47.7529
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5580.0000
Antenna Gain(typical) (dBi)	12.1800
Antenna Gain(numeric)	16.5196
Power density at prediction frequency (mW/cm ²)	0.0251
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

Service Port5-3 802.11a BW (5260~5320) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	15.5600
Max Peak output Power at antenna input terminal (mW)	35.9749
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5260.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0147
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-4 802.11a BW (5500~5720) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	16.9400
Max Peak output Power at antenna input terminal (mW)	49.4311
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5260.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0184
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-5 802.11n 20MHz BW(5260 ~5320) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	16.4800
Max Peak output Power at antenna input terminal (mW)	44.4631
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5260.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0181
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-6 802.11n 20MHz BW(5500~5270) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	17.6300
Max Peak output Power at antenna input terminal (mW)	57.9429
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5580.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0216
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-7 802.11ac 20MHz BW(5260~5320) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	17.0100
Max Peak output Power at antenna input terminal (mW)	50.2343
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5260.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0205
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-8 802.11ac_20MHz BW(5500~5720) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	17.2600
Max Peak output Power at antenna input terminal (mW)	53.2108
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5720.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0199
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-9 802.11n_40MHz BW(5270~5310) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	11.3300
Max Peak output Power at antenna input terminal (mW)	13.5831
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5310.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0055
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-10 802.11n_40MHz BW(5510~5710) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	18.7100
Max Peak output Power at antenna input terminal (mW)	74.3019
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5710.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0277
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-11 802.11ac_40MHz BW(5270~5310) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	11.0500
Max Peak output Power at antenna input terminal (mW)	12.7350
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5310.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0052
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-12 802.11ac 40MHz BW(5510~5710) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	18.9000
Max Peak output Power at antenna input terminal (mW)	77.6247
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5710.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0290
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-13 802.11ac 80MHz BW(5290) UNII 2A

Max Peak output Power at antenna input terminal (dBm)	9.6100
Max Peak output Power at antenna input terminal (mW)	9.1411
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5290.0000
Antenna Gain(typical) (dBi)	11.0800
Antenna Gain(numeric)	12.8233
Power density at prediction frequency (mW/cm ²)	0.0037
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

5-14 802.11ac 80MHz BW(5530~5690) UNII 2C

Max Peak output Power at antenna input terminal (dBm)	18.9300
Max Peak output Power at antenna input terminal (mW)	78.1628
Prediction distance (cm)	50.0000
Prediction frequency (MHz)	5690.0000
Antenna Gain(typical) (dBi)	10.6900
Antenna Gain(numeric)	11.7220
Power density at prediction frequency (mW/cm ²)	0.0292
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

6. RESULTS

DTS BAND

Monitoring Port

1. The power density level at 50 cm is **0.0521 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 2.4GHz BAND**
2. The power density level at 50 cm is **0.0577mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 5.8GHz BAND**

->Simultaneous MPE 50cm is $(0.0521/1.0) + (0.0577/1.0) < 1$

* The Worst case Adapter 2.4 GHz 3TX MiMO: 25.75 dBi , 5.8 GHz 3Tx MiMo: 21.35 dBi is
Highest Power

Service Port

1. The power density level at 50 cm is **0.1081 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 2.4GHz BAND**
2. The power density level at 50 cm is **0.1135 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 5.8GHz BAND**

->Simultaneous MPE 50cm is $(0.1081/1.0) + (0.1135/1.0) < 1$

* The Worst case Adapter 2.4 GHz 3TX MiMO: 25.05 dBi , 5.8 GHz 3Tx MiMo: 25.26 dBi is
Highest Power

UNIT 1 BAND

Monitoring Port

1. The power density level at 50 cm is **0.0033mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5180~5240) BAND**

Service Port

- 1.The power density level at 50 cm is **0.0038 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a BW(5180~5240) BAND**
2. The power density level at 50 cm is **0.0038 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW(5180~5240) BAND**
3. The power density level at 50 cm is **0.0059 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW(5190~5230) BAND**
4. The power density level at 50 cm is **0.0039 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_20MHz BW(5180~5240) BAND**
5. The power density level at 50 cm is **0.0052mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_40MHz(5190~5230) BAND.**
6. The power density level at 50 cm is **0.0040 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_80MHz BW(5210) BAND**

UNII 2A, UNII 2C BAND

Monitoring Port

1. The power density level at 50 cm is **0.0241 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5260~5320) UNII 2A BAND**
2. The power density level at 50 cm is **0.0251mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at 802.11a(5500~5720) UNII 2C BAND**

Service Port

1. The power density level at 50 cm is **0.0147 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11a BW(5260~5320) UNII 2A BAND**
2. The power density level at 50 cm is **0.0184mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11a BW(5260~5320) UNII 2C BAND**
3. The power density level at 50 cm is **0.0181 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n BW(5260~5320) UNII 2A BAND**
4. The power density level at 50 cm is **0.0216 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_20MHz BW (5500~5270) UNII 2C BAND.**
5. The power density level at 50 cm is **0.0205 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_20MHz BW (5260~5320) UNII 2A BAND.**
6. The power density level at 50 cm is **0.0199 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_20MHz BW (5500~5720) UNII 2C BAND.**
7. The power density level at 50 cm is **0.0055mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW (5270~5310) UNII 2A BAND.**
8. The power density level at 50 cm is **0.0277mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11n_40MHz BW (5510~5710) UNII 2C BAND.**
9. The power density level at 50 cm is **0.0052 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_40MHz BW (5270~5310) UNII 2A BAND.**
10. The power density level at 50 cm is **0.0290mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_40MHz BW (5510~5710) UNII 2C BAND.**
11. The power density level at 50 cm is **0.0037mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm² at at 802.11ac_80MHz BW (5290) UNII 2A BAND.**

12. The power density level at 50 cm is **0.0292 mW/cm²**, which is below the uncontrolled exposure limit of **1.0 mW/cm²** at **802.11ac_80MHz BW (5530~5690) UNII 2C BAND**.