

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

2-1. CDMA BAND

Max Peak output Power at antenna input terminal (dBm)	24.810
Max Peak output Power at antenna input terminal (mW)	302.691
Prediction distance (cm)	20.000
Prediction frequency (MHz)	824.700
Antenna Gain(typical) (dBi)	1.620
Antenna Gain(numeric)	1.452
Power density at prediction frequency (mW/cm ²)	0.08744
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.550

2-2. PCS CDMA BAND

Max Peak output Power at antenna input terminal (dBm)	24.67000
Max Peak output Power at antenna input terminal (mW)	293.08932
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1852.250
Antenna Gain(typical) (dBi)	4.55
Antenna Gain(numeric)	2.85102
Power density at prediction frequency (mW/cm ²)	0.166238
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

2-3. LTE _BAND 2

Max Peak output Power at antenna input terminal (dBm)	23.26000
Max Peak output Power at antenna input terminal (mW)	211.83611
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	1855.000
Antenna Gain(typical) (dBi)	4.55000
Antenna Gain(numeric)	2.85102
Power density at prediction frequency (mW/cm ²)	0.120152
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

2-4. LTE _BAND 5

Max Peak output Power at antenna input terminal (dBm)	23.040
Max Peak output Power at antenna input terminal (mW)	201.372
Prediction distance (cm)	20.000
Prediction frequency (MHz)	826.500
Antenna Gain(typical) (dBi)	1.620
Antenna Gain(numeric)	1.452
Power density at prediction frequency (mW/cm ²)	0.05817
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.551

2-5. LTE _ BAND 4

Max Peak output Power at antenna input terminal (dBm)	23.21000
Max Peak output Power at antenna input terminal (mW)	209.41125
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1712.500
Antenna Gain(typical) (dBi)	0.61000
Antenna Gain(numeric)	1.15080
Power density at prediction frequency (mW/cm ²)	0.047944
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

2-6. LTE _ BAND 17

Max Peak output Power at antenna input terminal (dBm)	23.100
Max Peak output Power at antenna input terminal (mW)	204.174
Prediction distance (cm)	20.000
Prediction frequency (MHz)	706.500
Antenna Gain(typical) (dBi)	3.950
Antenna Gain(numeric)	2.483
Power density at prediction frequency (mW/cm ²)	0.10086
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.471

2-7. LTE _ BAND 13

Max Peak output Power at antenna input terminal (dBm)	22.760
Max Peak output Power at antenna input terminal (mW)	188.799
Prediction distance (cm)	20.000
Prediction frequency (MHz)	782.000
Antenna Gain(typical) (dBi)	2.110
Antenna Gain(numeric)	1.626
Power density at prediction frequency (mW/cm ²)	0.06106
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.521

2-8. GSM 850 BAND

Max Peak output Power at antenna input terminal (dBm)	33.680
Max Peak output Power at antenna input terminal (mW)	925.000
Prediction distance (cm)	20.000
Prediction frequency (MHz)	836.600
Antenna Gain(typical) (dBi)	1.520
Antenna Gain(numeric)	1.419
Power density at prediction frequency (mW/cm ²)	0.266114
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.558

2-9. GSM 1900 BAND

Max Peak output Power at antenna input terminal (dBm)	30.24000
Max Peak output Power at antenna input terminal (mW)	1056.81751
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	1850.2
Antenna Gain(typical) (dBi)	4.55
Antenna Gain(numeric)	2.85102
Power density at prediction frequency (mW/cm ²)	0.599419
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

2-10. WCDMA 850 BAND

Max Peak output Power at antenna input terminal (dBm)	23.880
Max Peak output Power at antenna input terminal (mW)	925.000
Prediction distance (cm)	20.000
Prediction frequency (MHz)	826.400
Antenna Gain(typical) (dBi)	1.520
Antenna Gain(numeric)	1.419
Power density at prediction frequency (mW/cm ²)	0.26114
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.551

2-11. WCDMA 1900 BAND

Max Peak output Power at antenna input terminal (dBm)	23.570000
Max Peak output Power at antenna input terminal (mW)	227.50974
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	1852.400
Antenna Gain(typical) (dBi)	4.55
Antenna Gain(numeric)	2.85102
Power density at prediction frequency (mW/cm ²)	0.129042
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

2-12. WCDMA 1700 BAND

Max Peak output Power at antenna input terminal (dBm)	23.640
Max Peak output Power at antenna input terminal (mW)	231.20648
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1712.400
Antenna Gain(typical) (dBi)	0.610
Antenna Gain(numeric)	1.15080
Power density at prediction frequency (mW/cm ²)	0.05293
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.00000

2-13. BT 4.0 BAND

Max Peak output Power at antenna input terminal (dBm)	6.98000
Max Peak output Power at antenna input terminal (mW)	4.98884
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2440.000
Antenna Gain(typical) (dBi)	4.70000
Antenna Gain(numeric)	2.95121
Power density at prediction frequency (mW/cm ²)	0.00293
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

2-14. BT BAND

Max Peak output Power at antenna input terminal (dBm)	7.36000
Max Peak output Power at antenna input terminal (mW)	5.44503
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2480.000
Antenna Gain(typical) (dBi)	4.70000
Antenna Gain(numeric)	2.95121
Power density at prediction frequency (mW/cm ²)	0.00320
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

2-15. WLAN 2.4GHz BAND

Max Peak output Power at antenna input terminal (dBm)	21.71000
Max Peak output Power at antenna input terminal (mW)	148.25181
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2462.000
Antenna Gain(typical) (dBi)	4.70000
Antenna Gain(numeric)	2.95121
Power density at prediction frequency (mW/cm ²)	0.08704
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

2-16. WLAN 5.8GHz BAND

Max Peak output Power at antenna input terminal (dBm)	18.62000
Max Peak output Power at antenna input terminal (mW)	72.77798
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	5745.000
Antenna Gain(typical) (dBi)	3.90000
Antenna Gain(numeric)	2.45471
Power density at prediction frequency (mW/cm ²)	0.03554
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

2-17. WLAN UNIT BAND

Max Peak output Power at antenna input terminal (dBm)	11.70000
Max Peak output Power at antenna input terminal (mW)	14.79108
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	5180.0000
Antenna Gain(typical) (dBi)	4.40000
Antenna Gain(numeric)	2.75423
Power density at prediction frequency (mW/cm ²)	0.00810
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

3. RESULTS

- 1) The power density level at 20 cm is **0.08744 mW/cm²**, which is below the controlled exposure limit of **0.550 mW/cm²** at **CDMA band**.
- 2) The power density level at 20 cm is **0.120152 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **PCS CDMA band**.
- 3) The power density level at 20 cm is **0.08744 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **LTE band 2**.
- 4) The power density level at 20 cm is **0.05817 mW/cm²**, which is below the controlled exposure limit of **0.551 mW/cm²** at **LTE band 5**.
- 5) The power density level at 20 cm is **0.047944 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **LTE band 4**.
- 6) The power density level at 20 cm is **0.10086 mW/cm²**, which is below the controlled exposure limit of **0.471 mW/cm²** at **LTE band 17**.
- 7) The power density level at 20 cm is **0.06106 mW/cm²**, which is below the controlled exposure limit of **0.521 mW/cm²** at **LTE band 13**.
- 8) The power density level at 30 cm is **0.266114 mW/cm²**, which is below the controlled exposure limit of **0.566 mW/cm²** at **GSM 850 BAND**.
- 9) The power density level at 20 cm is **0.599419 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **GSM 1900 BAND**.
- 10) The power density level at 20 cm is **0.26114 mW/cm²**, which is below the controlled exposure limit of **0.551 mW/cm²** at **WCDMA 800 BAND**.
- 11) The power density level at 20 cm is **0.129042 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **WCDMA 1900 BAND**.
- 12) The power density level at 20 cm is **0.05293 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **WCDMA 1900 BAND**.
- 13) The power density level at 20 cm is **0.00293 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **BT 4.0 BAND**.

- 14) The power density level at 20 cm is **0.00320 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **BT BAND**
- 15) The power density level at 20 cm is **0.008704 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **WLAN 2.4GHz BAND**
- 16) The power density level at 20 cm is **0.03554 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **WLAN 5.8 GHz BAND**
- 17) The power density level at 20 cm is **0.00810 mW/cm²**, which is below the controlled exposure limit of **1.0 mW/cm²** at **UNII BAND**