

# 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

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

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

#### 3-1. GSM 850 BAND

Average Max output Power at antenna input terminal	33.5
Average Max output Power at antenna input terminal	2238.721
Prediction distance (cm)	20.000
Prediction frequency (MHz)	824.200
Antenna Gain(typical) (dBi)	-3.250
Antenna Gain(numeric)	0.473
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.211
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.549

#### 3-2. GSM 1900 BAND

Average Max output Power at antenna input terminal	30.500
Average Max output Power at antenna input terminal	1122.018
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1930.200
Antenna Gain(typical) (dBi)	1.260
Antenna Gain(numeric)	1.337
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.298
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

**3-3. WCDMA 850 BAND**

Average Max output Power at antenna input terminal	25.500
Average Max output Power at antenna input terminal	354.813
Prediction distance (cm)	20.000
Prediction frequency (MHz)	826.400
Antenna Gain(typical) (dBi)	-3.250
Antenna Gain(numeric)	0.473
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.033
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.551

**3-4. WCDMA 1900 BAND**

Average Max output Power at antenna input terminal	25.500
Average Max output Power at antenna input terminal	354.813
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1852.400
Antenna Gain(typical) (dBi)	1.260
Antenna Gain(numeric)	1.337
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.094
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

**3-5. WCDMA 1700 BAND**

Average Max output Power at antenna input terminal	25.500
Average Max output Power at antenna input terminal	354.813
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1712.4
Antenna Gain(typical) (dBi)	-0.130
Antenna Gain(numeric)	0.971
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.069
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

**3-6. LTE BAND 2**

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1850.700
Antenna Gain(typical) (dBi)	1.260
Antenna Gain(numeric)	1.337
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.111
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

**3-7. LTE BAND 5**

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	824.700
Antenna Gain(typical) (dBi)	-3.250
Antenna Gain(numeric)	0.473
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.039
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.550

**3-8. LTE BAND 4**

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1710.700
Antenna Gain(typical) (dBi)	-0.130
Antenna Gain(numeric)	0.971
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.080
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

**3-9. LTE BAND 17**

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	706.500
Antenna Gain(typical) (dBi)	-3.030
Antenna Gain(numeric)	0.498
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.041
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.471

**3-10. LTE BAND 7**

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	2502.500
Antenna Gain(typical) (dBi)	-0.220
Antenna Gain(numeric)	0.951
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.079
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	1.0000

3-11. LTE BAND 12

Average Max output Power at antenna input terminal	26.200
Average Max output Power at antenna input terminal	416.869
Prediction distance (cm)	20.000
Prediction frequency (MHz)	699.700
Antenna Gain(typical) (dBi)	-3.030
Antenna Gain(numeric)	0.498
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.041
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.466