

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

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

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	34.10
Average Max output Power at antenna input terminal	2570.396
Prediction distance (cm)	30.000
Prediction frequency (MHz)	824.200
Antenna Gain(typical) (dBi)	-2.400
Antenna Gain(numeric)	0.600
Power density at prediction frequency (mW/cm ²)	0.13078
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	0.549

3-2. GSM 1900 BAND

Average Max output Power at antenna input terminal	32.000
Average Max output Power at antenna input terminal	1584.893
Prediction distance (cm)	30.000
Prediction frequency (MHz)	1850.2000
Antenna Gain(typical) (dBi)	-0.300
Antenna Gain(numeric)	0.93325
Power density at prediction frequency (mW/cm ²)	0.130782
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

3-3. BT

Average Max output Power at antenna input terminal	3.0000
Average Max output Power at antenna input terminal	1.995
Prediction distance (cm)	30.000
Prediction frequency (MHz)	2402.00
Antenna Gain(typical) (dBi)	-0.31
Antenna Gain(numeric)	0.93111
Power density at prediction frequency (mW/cm ²)	0.000164
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	1.0000

4. Multiple radio MPE Factor

1) GSM 850 and BT

$$(0.13078/0.549) + (0.000164/1.0000) = 0.23822 + 0.000164 = 0.238384 < 1.0 \text{ mW}$$

2) GSM 1900 and BT

$$(0.130782/1.0000) + (0.000164/1.0000) = 0.130782 + 0.000164 = 0.130946 < 1.0 \text{ mW}$$

⇒ Therefore, the worst-case situation is $(0.13078/0.549) + (0.000164/1.0000) = 0.238384$
⇒ which is less than “1”

This confirmed that the device comply with fcc 1.1310 MPE Limit.