

8. RADIO FREQUENCY EXPOSURE

Limit

According to §1.1310 and §2.1091 RF exposure is calculated.

Table: Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Power Density (S) (mW/cm ²)
0.3–1.34	*(100)
1.34–30	*(180/f ²)
30–300	0.2
300–1500	f/1500
1500–100,000	1.0

F = frequency in MHz

* = Plane-wave equivalent power density

Maximum Permissible Exposure

The MPE was calculated at 20cm to show compliance with the power density limit.

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

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.

Note:

1. Manufacturer declared that the maximum antenna gain is 3.0dBi.
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

GSM 850 Band

The Max. Technically Possible Output Power in dBm	31.0	dBm
Max. Peak output Power in mW	1258.93	mW
Prediction distance	20	cm
Prediction frequency	836.6	MHz
Antenna Gain(typical)	3.0	dBi
Antenna Gain(numeric)	2.0	
Power density at prediction frequency(S)	0.501	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5577	mW/cm ²

PCS 1900 Band

The Max. Technically Possible Output Power in dBm	30.0	dBm
Max. Peak output Power in mW	1000.0	mW
Prediction distance	20	cm
Prediction frequency	1880.0	MHz
Antenna Gain(typical)	3.0	dBi
Antenna Gain(numeric)	2.0	
Power density at prediction frequency(S)	0.398	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1	mW/cm ²

Test Results

The power density level worst case at 20 cm is below the uncontrolled exposure limit.