5.7. MPE

5.7.1. Limit

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

5.7.2. 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.

Note:

1. Manufacturer declared that the maximum antenna gain is 2.0 dBi.

2. Manufacturer declared that the nearest distance between human and the EUT is 40.6cm.

3. Only record worst case data.

GSM 850

Max Peak output Power at antenna input terminal	30.0	dBm
Max Peak output Power at antenna input terminal	1000	mW
Prediction distance	40.6	cm
Prediction frequency	848.8	MHz
Antenna Gain(typical)	2.0	dBi
Antenna Gain(numeric)	1.58	
Power density at prediction frequency(S)	0.076	mW/cm2
MPE limit for uncontrolled exposure at prediction frequency	0.566	mW/cm2

GSM 1900

Max Peak output Power at antenna input terminal	30	dBm
Max Peak output Power at antenna input terminal	1000	mW
Prediction distance	40.6	cm
Prediction frequency	1908.8	MHz
Antenna Gain(typical)	2.0	dBi
Antenna Gain(numeric)	1.58	
Power density at prediction frequency(S)	0.076	mW/cm2
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm2

5.7.3 Test Results

The power density level at 40.6 cm is 0.076mW/cm², which is below the uncontrolled exposure limit for Cellular & PCS band.