5   §1.1307(b) (1) & §2.1091 - RF EXPOSURE

5.1   Applicable Standard

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

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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

5.2   MPE Prediction

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: 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

GSM Band

Maximum peak output power at antenna input terminal (dBm): <u>30.86</u>
Maximum peak output power at antenna input terminal (mW): <u>1219</u>
Prediction distance (cm): <u>20</u>
Prediction frequency (MHz): <u>848.8</u>
Antenna Gain, typical (dBi): <u>2.5</u>
Maximum Antenna Gain (numeric): <u>1.78</u>
Power density at predication frequency at 20 cm (mW/cm^2): <u>0.432</u>
MPE limit for uncontrolled exposure at predication frequency (mW/cm^2): <u>0.566</u>

5.3   Test Result

The EUT is a mobile device. The power density level at 20 cm is <u>0.432</u> mW/cm², which is below the uncontrolled exposure limit of 0.566 mW/cm² at 848.8MHz for GSM band.