

# Prediction of MPE limit at given distance

Product Descritpion: Cordless Fixed Wireless Phone

Type: FXP-852IM

### 1. Introduction

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

$$S = \frac{PG}{4 \pi R^{-2}}$$

Where:

S = power density

P = power input to the 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

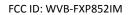
# 2. Limits for Maximum Permissible Exposure

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner the ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

According to FCC Part 1.1310 RF exposure is calculated.

#### **Limits for General Population/ Uncontrolled Exposure**

Limits for General Population/ Uncontrolled Exposure				
Frequency Range	Electric Field	Magnetic Field	Power Density	
(MHz)	Strength(E)(V/m)	Strength (H)(A/m)	(S)(mW/cm <sup>2</sup> )	
0.3-1.34	614	1.63	(100)*	
1.34-30	824/f	2.19/f	(180/f2)*	
30-300	27.5	0.073	0.2	
300-1500			f/1500	
1500-100,000			1.0	





# 3. Test result

#### GSM 850MHz

Maximum ERP(dBm):	32.65
Maximum ERP(mW):	1840.77
Source-based time-averaged output power(P*G):	1865
Prediction distance(cm):	20
Predication frequency(MHz):	836.5
Antenna Gain (typical) (dBi):	2
Power density at predication frequency at 20 cm(mW/cm²):	0.371
MPE limit for RF exposure at prediction frequency(mW/cm²):	0.558

### **GSM 1900MHz**

Maximum peak output power at antenna input terminal(dBm):	30.34
Maximum peak output power at antenna input terminal(mW):	1081.43
Source-based time-averaged output power(P*G):	595
Prediction distance(cm):	20
Predication frequency(MHz):	1880
Antenna Gain (typical) (dBi):	2
Power density at predication frequency at 20 cm(mW/cm²):	0.118
MPE limit for RF exposure at prediction frequency(mW/cm <sup>2</sup> ):	1.0

# 4. Conclusion

Test result is passed.