RF EXPOSURE EVULATION

1.1 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	Magnetic field Strength	Power density	Averaging time
1.34 - 30......................................	824/f	2.19/f	*(180/ f²)	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

1.2 MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

Power density at the specific separation:

$S = PG/(4R^2 \pi)$
 	
$S = (1.40 * 0.26) / (4 * 20^2 * \pi)$
 	
$S = 0.0001 \text{ mW/cm}^2$
	Where,
	   S = Maximum power density (mW/cm^2)
	   P = Power input to the antenna (mW)
	   G = Numeric power gain of the antenna
	   R = Distance to the center of the radiation of the antenna
	      (20 cm = limit for MPE)

1.3 MAXIMUM PERMISSIBLE EXPOSURE Prediction

- Calculated under the worst-case conditions of each mode.

(Measured power 0.9 dBm ± 0.5dB)

3-1. 2.4 GHz Mode

Max Peak output Power at antenna input terminal	1.47	dBm
Max Peak output Power at antenna input terminal	1.40	mW
Prediction distance	5	mm
Prediction frequency	2,480	MHz
Antenna Gain(typical)	-5.84	dBi
Antenna Gain(numeric)	0.26	-

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]

$\cdot [\sqrt{f(GHz)}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR

$[(1.40)/(5)] \cdot [\sqrt{2.480}] = 0.441 \leq 3.0$

Thus, SAR for this device is not required.