

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/ 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

1.2 MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

Power density at the specific separation:

$S = PG/(4R^2 \pi)$	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)
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Mode	Frequency Range (MHz)	Antenna Gain		Target Output Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11b	2412~2462	3.4	2.19	26.0	398.11	20	0.1734	1.0
802.11g		3.4	2.19	25.5	354.81	20	0.1546	1.0
802.11 n-HT20		3.4	2.19	25.5	354.81	20	0.1546	1.0
802.11 n-HT40	2422~2452	3.4	2.19	26.0	398.11	20	0.1734	1.0
BLE	2402~2480	3.4	2.19	8.0	6.31	20	0.0027	1.0
BT	2402~2480	3.4	2.19	10.0	10.00	20	0.0044	1.0

Simultaneous transmission operations

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 (also illustrated in Appendix B)

{[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10]} mW = 96 + 1500 = 1596 mW, for > 1500 MHz and ≤ 6 GHz

Thus, SAR for this device is not required.