

**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 <sup>2</sup> )	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....	.....	.....	f/1500	30
1500 - 100.000.....	.....	.....	<b>1.0</b>	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:****EDR,BDR :**

$S = PG/(4R^2 \pi)$ $S = (5.32 * 2) / (4 * 0.82^2 * \pi)$ $S = 0.0017 \text{ mW/cm}^2$	<p>Where,</p> <p>S = Maximum power density (mW/cm<sup>2</sup>)</p> <p>P = Power input to the antenna (mW)</p> <p>G = Numeric power gain of the antenna</p> <p>R = Distance to the center of the radiation of the antenna (20 cm = limit for MPE)</p>
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**BLE :**

$S = PG/(4R^2 \pi)$ $S = (9.21 * 2) / (4 * 1.08^2 * \pi)$ $S = 0.0029 \text{ mW/cm}^2$	<p>Where,</p> <p>S = Maximum power density (mW/cm<sup>2</sup>)</p> <p>P = Power input to the antenna (mW)</p> <p>G = Numeric power gain of the antenna</p> <p>R = Distance to the center of the radiation of the antenna (20 cm = limit for MPE)</p>
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Simultaneous transmission operations

SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance  $\leq 50$  mm = **Used**

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}]$

$= [9.33 / 5] * [\sqrt{2.442}] = 2.478 \leq 3$ , for 1g SAR

**Thus, SAR for this device is not required.**