ATTACHMENT

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:

$S = PG/(4R^2 \pi)$ $S = (3.13 * 0.30) / (4 * 20^2 * \pi)$ $S = 0.0002 \text{ mW/cm}^2$	Where, S = Maximum power density (mW/cm²) 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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1.3 MAXIMUM PERMISSIBLE EXPOSURE Prediction

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

(Measured power 4.95 dBm ± 0.5dB)

Zigbee Mode

Max Peak output Power at antenna input terminal	4.95	dBm
Max Peak output Power at antenna input terminal	3.13	mW
Prediction distance	5	cm
Prediction frequency	2405	MHz
Antenna Gain(typical)	-5.27	dBi
Antenna Gain(numeric)	0.30	-

For 100 MHz to 6 GHz and test separation distances $\leq$ 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

$[(3.13)/(5)] \cdot [\sqrt{2.405}] = 0.97 \leq 3.0$

Thus, SAR for this device is not required.