
SAR Test Exclusion Calculations

Model: SB201501
FCC ID: 2ABSF-SB201501
IC: 11586A-SB201501

We, SenionLab AB, hereby declare that the SenionBeacon, model SB201301 of SenionLab AB is exempt from RF exposure SAR evaluation as its output power meets the exclusion limits stated in FCC Part 2 §2.1093.

These calculations are done according to KDB 447498 D01 Section 4.3.1 1) which has the following exclusions. The 1g and 10g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances $\leq 50\text{mm}$ are determined by

$$\frac{P}{d} \cdot \sqrt{f} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

where P is the power in mW, d is the test separation distance in mm and f is the frequency in GHz.

The minimum possible distance from the antenna to a user or bystander, given by the distance from the antenna to the outer surface of the device, is 6 mm. The maximum RF output power is 2.6 dBm, the integral antenna gain is 4 dBi and the tune up tolerance is 1.5 dBi. Thus the maximum EIRP is 8.1 dBm (6.5 mW). Usually, this power is only used during small fraction of time when the advertisement message is sent out. However, to be conservative in these calculations, we are calculating with constant transmission at this power level. The RF transmit frequency is 2.450 GHz.

$$\frac{P}{d} \cdot \sqrt{f} = \frac{6.5}{6} \cdot \sqrt{2.450} = 1.696 < 3.0$$

As can be seen in the calculations above we are well below the SAR test exclusion threshold 3.0 for 1-g SAR.

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