

RF exposure information for SAR test exclusion

The Insulin Patch Pump will be used as a portable device operating in 2402 – 2480 MHz band. The device is equipped with an integrated antenna of 0.5 dBi gain.

Maximum measured transmitter power:

P _{out} conducted		Maximum antenna gain, dBi	P _{out} EIRP	
dBm	mW		dBm	mW
-0.16	0.96	0.5	0.34	1.08

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:

$[(\text{max. power including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] \leq 3.0$
for 1-g SAR and ≤ 7.5 for 10-g SAR

where:

- f(GHz) is the RF channel transmit frequency in GHz;
- Power and distance are rounded to the nearest mW and mm before calculation;
- The result is rounded to one decimal place for comparison;
- The value 3.0 and 7.5 are referred to as numeric threshold.

The minimum separation distance is assured by the typical device usage and the internal construction of the antenna and plastic case elements. The smallest distance from antenna to outer surface of the device is 2 mm. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion according to section 4.3.1(a) of KDB 447498 D01 General RF Exposure Guidance v06.

The 1-g body SAR test exclusion threshold at frequency 2.48 GHz and test separation distances 5.0 mm was determined as follows:

$$[1.08 \text{ mW} / 5.0 \text{ mm}] \times \sqrt{2.48} = 0.18 \times 1.57 = 0.283 \approx 0.3 < 3.0.$$

Upon this the device is excluded from SAR evaluation according to KDB 447498 D01 v06.