

RF Exposure Letter

According to 447498 D01 General RF Exposure Guidance v06 The 1 - g and 10 - g SAR test

exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by: $[(\text{max. power of channel, including tune - up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1 - g SAR and ≤ 7.5 for 10 - g extremity SAR, where

$f(\text{GHz})$ 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

433.92MHz

$$\text{E.I.R.P} = \text{pt} * \text{gt} = (\text{E} * \text{d})^2 / 30$$

pt: transmitter output power in watts;

gt: numeric gain of the transmitting antenna (unitless);

gt = 1 (antenna gain 0dBi)

E: electric field strength in V/m;

$$\text{E} = 10^{[(\text{dB}\mu\text{V/m})/20]} / 10^6$$

d: measurement distance in meters;

$$\text{d} = 3 \text{ m}$$

$$\text{so E.I.R.P} = ((10^{[(\text{dB}\mu\text{V/m})/20]} / 10^6) * \text{d})^2 / 30$$

$$\text{pt}=93.99\text{dB}\mu\text{V/m}=-1.239\text{dBm}=0.7518\text{mW at } 433.92\text{MHz}$$

$$\text{So } (0.7518\text{mW}/5\text{mm}) \times \sqrt{0.43392\text{GHz}} = 0.0990 < 3$$

Then SAR evaluation is not required