

FCC ID: 2BPQH-RDRGRS

According to KDB447498 D01 General RF Exposure Guidance V06

Because the frequency is below 100M, calculate the exemption value for the SAR corresponding frequency first.

A. The 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 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

When the minimum test separation distance is $<$ 50 mm, a distance of 50 mm is applied to determine SAR test exclusion.

$$F=100\text{MHz}, d=50\text{mm}$$

$$[P(\text{mW}) / 50\text{mm}] * \sqrt{0.1\text{GHz}} \leq 3.0$$

Derived :

$$P(\text{mW}) \leq (3 * 50) / \sqrt{0.1} = 474\text{mW}$$

B. 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 (also illustrated in Appendix B):

1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz}) / 150)]\}$ mW, for 100 MHz to 1500 MHz

$$Pa(\text{mW}) + (d - 50\text{mm}) / 150 = 474 + (50 - 50) / (100 / 150) = 474\text{mW}$$

C. For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

1) For test separation distances $>$ 50 mm and $<$ 200 mm, the power threshold at the corresponding

test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$

2) For test separation distances \leq 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$

test separation distances $>$ 50 mm and $<$ 200 mm as follows:

$$Pb(\text{mW}) * [1 + \log(100/f(\text{MHz}))] = 474\text{mW} * [1 + \log(100/f(\text{MHz}))]$$

test separation distances \leq 50 mm as follows:

$$Pb(\text{mW}) * [1 + \log(100/f(\text{MHz}))] * 0.5 = 474\text{mW} * [1 + \log(100/f(\text{MHz}))] * 0.5 = 237 * [1 + \log(100/f(\text{MHz}))]$$

125kHz

Antenna: Induction coil

D<50mm

Frequency	Max Output power (dBuV/m)	Max Output power (mW)
125kHz	67.52	0.00169

SAR Exemption Power=237*[1+log(100/f(MHz))]= 237*[1+log(100/0.125)]=925mW

0.00169mW<925mW

13.56MHz

Antenna: Induction coil

D<50mm

Frequency	Max Output power (dBuV/m)	Max Output power (mW)
13.56MHz	60.95	0.00037

SAR Exemption Power=237*[1+log(100/f(MHz))]= 237*[1+log(100/13.56)]=443mW

0.00037mW<443mW

125kHz and 13.56MHz cannot be emitted simultaneously.

Conclusion:

The maximum results have not exceeded the limit, no SAR is required .

Signature:



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