

17 RF Exposure

FCC KDB 447498 D01 General RF Exposure Guidance v06 Clause 4.3 General SAR test exclusion guidance

4.3.1 (c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C): 33

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 $[1 + \log(100/f(\text{MHz}))]$

4.3.1 (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): 32 1)
 $\{[\text{Power allowed at numeric threshold for } 50 \text{ mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\} \text{ mW, for } 100 \text{ MHz to } 1500 \text{ MHz}$

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

3) SAR measurement procedures are not established below 100 MHz

Operating Frequency 13.56 MHz

Step 1:

From the table in Appendix B of KDB 447498, the power threshold is 474 mW for 100 MHz at 50 mm. Thus, by substituting the values into the variables in equation 4.3.1(b), the calculated SAR test Exclusion Threshold (SARET) level is...

$$\text{SARET} = \{474 + [(50-50)*(100/150)]\} = 474 \text{ mW}$$

Step 2:

Multiply the value of SARET in Step 1 by 0.5, the result is 237 mW

Results

Channel Frequency (MHz)	Declared EIRP (mW)	SAR Exclusion Threshold (mW)	SAR Evaluation
13.56	100	237	Exempted

The maximum EIRP output power declared by the manufacturer is 20 dBm, which is 100 mW and it is well below the SARET value of 237 mW (Calculated value in the above, which is the same value as in the table of Appendix C), thus it is exempted for SAR Evaluation.