



RF EXPOSURE EVALUATION METHOD

FCC ID: 2ANEUCHE-630

SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

BT-EDR

Modulation	Test Channel	Output Power (dBm)	Limit (dBm)
GFSK	Low	1.584	21
GFSK	Middle	3.098	21
GFSK	High	2.974	21
Pi/4 DQPSK	Low	-0.952	21
Pi/4 DQPSK	Middle	0.594	21
Pi/4 DQPSK	High	0.436	21
8DPSK	Low	-0.522	21
8DPSK	Middle	1.025	21
8DPSK	High	0.848	21

max possible output power (PK,conducted) : $4 \pm 1 \text{ dBm}$

3.78dBi logarithmic terms convert to numeric result is nearly 2.388

5dBm=3.16mW

2402MHz

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation}$

$\text{distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 3.16 / 5 \cdot \sqrt{2.402} = 0.98 \leq 3.0$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation

distance is 5mm.



2441MHz

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}] = \frac{3.16}{5} \cdot \sqrt{2.441} = 0.99 \leq 3.0$$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2480MHz

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}] = \frac{3.16}{5} \cdot \sqrt{2.48} = 1.00 \leq 3.0$$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.



BT-BLE

	Frequency	Maximum Conducted Output Power(PK)	Conducted Output Power Limit
	(MHz)	(dBm)	dBm
GFSK	2402	3.500	30
	2440	4.864	30
	2480	4.795	30

max possible output power (PK,conducted) : $5 \pm 1 \text{ dBm}$

3.78dBi logarithmic terms convert to numeric result is nearly 2.388

6dBm=3.98mW

2402MHz

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation}$

$\text{distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = 3.98/5 \cdot \sqrt{2.402} = 1.23 \leq 3.0$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation

distance is 5mm.



2440MHz

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}] = \frac{3.98}{5} \cdot \sqrt{2.440} = 1.24 \leq 3.0$$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

2480MHz

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}] = \frac{3.98}{5} \cdot \sqrt{2.480} = 1.25 \leq 3.0$$

Threshold at which no SAR required is 10mw and ≤ 3.0 for 1-g SAR, Separation distance is 5mm.

Conclusion: No SAR is required.