



**RF EXPOSURE EVALUATION METHOD**

**FCC ID:HBOUB450**

**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.

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:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where } f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz}$$

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.

Maximum measured transmitter power.

**BT 3.0**

<b>1Mbps</b>			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)
CH00	2402	-0.33	0.927
CH39	2441	1.02	1.265
CH78	2480	1.43	1.390
<b>2Mbps</b>			
CH00	2402	-1.21	0.757
CH39	2441	0.28	1.067
CH78	2480	0.86	1.219
<b>3Mbps</b>			
CH00	2402	-1.21	0.757
CH39	2441	0.29	1.069
CH78	2480	0.86	1.219

**BLE**

Test Channe	Frequency (MHz)	Maximum Conducted Output Power(PK) (dBm)	LIMIT mW
CH00	2402	2.03	1.596
CH19	2440	2.33	1.710
CH39	2480	2.58	1.811

Remark: The best case gain of the antenna is 1.0dBi.

1.0 dBi logarithmic terms convert to numeric result is nearly 1.26

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

**BT 3.0**

Test Channel	Range	tune up max power (dBm)	[(max. power of channel, including tune-up tolerance, mW)	(min. test separation distance, mm)]	[f(GHz)]	Result	Limit
<b>1Mbps</b>							
CH00	-0.5~1.5	1.5	1.413	5	2.402	0.438	3
CH39	-0.5~1.5	1.5	1.413	5	2.441	0.441	3
CH78	-0.5~1.5	1.5	1.413	5	2.480	0.445	3
<b>2Mbps</b>							
CH00	-3~-1	-1	0.794	5	2.402	0.246	3
CH39	-1~1	1	1.259	5	2.441	0.393	3
CH78	-1~1	1	1.259	5	2.480	0.397	3
<b>3Mbps</b>							
CH00	-1.5~0.5	0.5	1.122	5	2.402	0.348	3
CH39	-1.5~0.5	0.5	1.122	5	2.441	0.351	3
CH78	-1.5~0.5	0.5	1.122	5	2.480	0.353	3

**BLE**

Test Channel	Range	tune up max power (dBm)	[(max. power of channel, including tune-up tolerance, mW)	(min. test separation distance, mm)]	[f(GHz)]	Result	Limit
CH00	1~3	3	1.995	5	2.402	0.618	3
CH39	1~3	3	1.995	5	2.441	0.623	3
CH78	1~3	3	1.995	5	2.480	0.628	3

The test Result is less than 3.0 for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR.

**Conclusion:** No SAR is required.