

**RF EXPOSURE EVALUATION METHOD****FCC ID: 2AC76DI-1011****SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and  $\leq 50$  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  $\leq 50$  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  $\leq 7.5$  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  $\leq 50$  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.

WIFI:

<b>TX 802.11b Mode</b>				
Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	Maximum Conducted Output Power(AV)
	(MHz)	(dBm)	(dBm)	(mW)
CH01	2412	14.73	9.61	9.141
CH06	2437	14.66	9.64	9.204
CH11	2462	14.61	9.59	9.099
<b>TX 802.11g Mode</b>				
CH01	2412	12.71	8.58	7.211
CH06	2437	12.68	8.55	7.161
CH11	2462	12.61	8.48	7.047
<b>TX 802.11n-HT20 Mode</b>				
CH01	2412	12.77	8.54	7.145
CH06	2437	12.65	8.42	6.950
CH11	2462	12.59	8.36	6.855
<b>TX 802.11n-HT40 Mode</b>				
CH03	2422	10.88	7.46	5.572
CH06	2437	10.83	7.41	5.508
CH09	2452	10.77	7.35	5.433

## BT3.0:

1Mbps			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)
CH00	2402	2.675	1.851
CH39	2441	3.691	2.339
CH78	2480	4.966	3.138
2Mbps			
CH00	2402	2.454	1.760
CH39	2441	3.627	2.305
CH78	2480	4.900	3.090
3Mbps			
CH00	2402	2.725	1.873
CH39	2441	3.650	2.317
CH78	2480	4.849	3.054

## BT4.0

Test Channel	Frequency	Maximum Conducted Output Power (PK)	Maximum Conducted Output Power (PK)
	(MHz)	(dBm)	mW
CH00	2402	0.73	1.183
CH19	2440	0.66	1.164
CH39	2480	0.61	1.151

Remark: The best case gain of the antenna is WIFI: 2.0dBi.

2.0 dBi logarithmic terms convert to numeric result is nearly 1.58

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:

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

## WIFI:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ $\sqrt{f}$ (GHz)]	Result	Limit
802.11b					
CH01	9.141	5	2.412	2.84	3
CH06	9.204	5	2.437	2.87	3
CH11	9.099	5	2.462	2.86	3
802.11g					
CH01	7.211	5	2.412	2.24	3
CH06	7.161	5	2.437	2.24	3
CH11	7.047	5	2.462	2.21	3
802.11n(20)					
CH01	7.145	5	2.412	2.22	3
CH06	6.950	5	2.437	2.17	3
CH11	6.855	5	2.462	2.15	3
802.11n(40)					
CH03	5.572	5	2.422	1.73	3
CH06	5.508	5	2.437	1.72	3
CH09	5.433	5	2.452	1.70	3

## BT3.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ $\sqrt{f}$ (GHz)]	Result	Limit
1Mbps					
CH00	1.851	5	2.402	0.574	3
CH39	2.339	5	2.441	0.731	3
CH78	3.138	5	2.480	0.988	3
2Mbps					
CH00	1.760	5	2.402	0.545	3
CH39	2.305	5	2.441	0.720	3
CH78	3.090	5	2.480	0.973	3
3Mbps					
CH00	1.873	5	2.402	0.581	3
CH39	2.317	5	2.441	0.724	3
CH78	3.054	5	2.480	0.962	3

BT4.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ √ f(GHz)]	Result	Limit
<b>1Mbps</b>					
CH00	1.183	5	2.402	0.367	3
CH19	1.164	5	2.440	0.364	3
CH39	1.151	5	2.480	0.362	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.