

**RF EXPOSURE EVALUATION METHOD****FCC ID:2ACH9HM-1507F****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 Peak Conducted Output Power (PK)	Maximum Peak Conducted Output Power (AV)	Maximum Peak Conducted Output Power (AV)
	(MHz)	(dBm)	(dBm)	mW
CH01	2412	12.26	9.57	9.057
CH06	2437	12.21	9.35	8.610
CH11	2462	12.35	9.51	8.933
<b>TX 802.11g Mode</b>				
CH01	2412	11.51	8.31	6.776
CH06	2437	11.36	8.23	6.653
CH11	2462	11.42	8.28	6.730
<b>TX 802.11n(20) Mode</b>				
CH01	2412	10.44	7.58	5.728
CH06	2437	10.68	7.52	5.649
CH11	2462	10.43	7.46	5.572
<b>TX 802.11n(40) Mode</b>				
CH03	2422	10.16	7.18	5.224
CH06	2437	10.03	7.21	5.260
CH09	2452	10.22	7.23	5.284

## BT3.0:

<b>1Mbps</b>			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)
CH00	2402	1.918	1.555
CH39	2441	2.831	1.919
CH78	2480	3.825	2.413
<b>2Mbps</b>			
CH00	2402	1.563	1.433
CH39	2441	2.451	1.758
CH78	2480	3.467	2.222
<b>3Mbps</b>			
CH00	2402	2.020	1.592
CH39	2441	2.943	1.969
CH78	2480	3.949	2.483

## BT4.0

Test Channel	Frequency	Maximum Conducted Output Power	Maximum Conducted Output Power
	(MHz)	(dBm)	mW
CH00	2402	0.898	1.230
CH19	2440	0.390	1.094
CH39	2480	0.145	1.034

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:

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

## WIFI:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ $\sqrt{f}$ (GHz)]	Result	Limit
<b>802.11b</b>					
CH01	9.057	5	2.412	2.81	3
CH06	8.610	5	2.437	2.69	3
CH11	8.933	5	2.462	2.80	3
<b>802.11g</b>					
CH01	6.776	5	2.412	2.10	3
CH06	6.653	5	2.437	2.08	3
CH11	6.730	5	2.462	2.11	3
<b>802.11n(20)</b>					
CH01	5.728	5	2.412	1.78	3
CH06	5.649	5	2.437	1.76	3
CH11	5.572	5	2.462	1.75	3
<b>802.11n(40)</b>					
CH03	5.224	5	2.422	1.63	3
CH06	5.260	5	2.437	1.64	3
CH09	5.284	5	2.452	1.65	3

## BT3.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ $\sqrt{f}$ (GHz)]	Result	Limit
<b>1Mbps</b>					
CH00	1.555	5	2.402	0.482	3
CH39	1.919	5	2.441	0.600	3
CH78	2.413	5	2.480	0.760	3
<b>2Mbps</b>					
CH00	1.433	5	2.402	0.444	3
CH39	1.758	5	2.441	0.549	3
CH78	2.222	5	2.480	0.700	3
<b>3Mbps</b>					
CH00	1.592	5	2.402	0.494	3
CH39	1.969	5	2.441	0.615	3
CH78	2.483	5	2.480	0.782	3

BT4.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[ $\sqrt{f}$ (GHz)]	Result	Limit
<b>1Mbps</b>					
CH00	1.230	5	2.402	0.381	3
CH19	1.094	5	2.440	0.342	3
CH39	1.034	5	2.480	0.326	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.