

**RF EXPOSURE EVALUATION METHOD****FCC ID: Y34-UITASM****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.

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  $\leq 50$  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)	dBm
CH01	2412	12.35	9.23	8.375
CH06	2437	12.44	9.46	8.831
CH11	2462	12.73	9.55	9.016
<b>TX 802.11g Mode</b>				
CH01	2412	11.71	8.16	6.546
CH06	2437	11.86	8.34	6.823
CH11	2462	11.08	8.02	6.339
<b>TX 802.11n(20) Mode</b>				
CH01	2412	10.32	7.59	5.741
CH06	2437	10.27	7.43	5.534
CH11	2462	10.41	7.66	5.834
<b>TX 802.11n(40) Mode</b>				
CH03	2422	9.91	7.32	5.395
CH06	2437	9.82	7.25	5.309
CH09	2452	9.77	7.17	5.212

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<b>1Mbps</b>			
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
<b>2Mbps</b>			
CH00	2402	2.454	1.760
CH39	2441	3.627	2.305
CH78	2480	4.900	3.090
<b>3Mbps</b>			
CH00	2402	2.725	1.873
CH39	2441	3.650	2.317
CH78	2480	4.849	3.054

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)]	[ $\sqrt{f(\text{GHz})}$ ]	Result	Limit
802.11b					
CH01	8.375	5	2.412	2.60	3
CH06	8.831	5	2.437	2.76	3
CH11	9.016	5	2.462	2.83	3
802.11g					
CH01	6.546	5	2.412	2.03	3
CH06	6.823	5	2.437	2.13	3
CH11	6.339	5	2.462	1.99	3
802.11n(20)					
CH01	5.741	5	2.412	1.78	3
CH06	5.534	5	2.437	1.73	3
CH11	5.834	5	2.462	1.83	3
802.11n(40)					
CH03	5.395	5	2.422	1.68	3
CH06	5.309	5	2.437	1.66	3
CH09	5.212	5	2.452	1.63	3

BT

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

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.