

RF EXPOSURE EVALUATION METHOD

FCC ID: YH5-8DTB37

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ 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.

Maximum measured transmitter power.

WIFI:

TX 802.11b Mode				
Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	Maximum Conducted Output Power(AV)
	(MHz)	(dBm)	(dBm)	(mW)
CH01	2412	12.41	9.59	9.099
CH06	2437	12.54	9.72	9.376
CH11	2462	12.47	9.65	9.226
TX 802.11g Mode				
CH01	2412	11.77	8.64	7.311
CH06	2437	11.72	8.59	7.228
CH11	2462	11.68	8.55	7.161
TX 802.11n-HT20 Mode				
CH01	2412	11.17	8.94	7.834
CH06	2437	11.14	8.91	7.780
CH11	2462	11.12	8.89	7.745
TX 802.11n-HT40 Mode				
CH03	2422	10.41	7.99	6.295
CH06	2437	10.34	7.92	6.194
CH09	2452	10.39	7.97	6.266

BT3.0:

1Mbps			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)
CH00	2402	1.988	1.581
CH39	2441	2.734	1.877
CH78	2480	2.461	1.762
2Mbps			
CH00	2402	1.625	1.454
CH39	2441	2.165	1.646
CH78	2480	2.282	1.691
3Mbps			
CH00	2402	2.163	1.646
CH39	2441	2.616	1.826
CH78	2480	2.631	1.833

BT4.0

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(PK)
	(MHz)	(dBm)	mW
CH00	2402	-2.66	0.542
CH19	2440	-2.57	0.553
CH39	2480	-2.63	0.546

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 ≤ 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)]	[√ f(GHz)]	Result	Limit
802.11b					
CH01	9.099	5	2.412	2.83	3
CH06	9.376	5	2.437	2.93	3
CH11	9.226	5	2.462	2.90	3
802.11g					
CH01	7.311	5	2.412	2.27	3
CH06	7.228	5	2.437	2.26	3
CH11	7.161	5	2.462	2.25	3
802.11n(20)					
CH01	7.834	5	2.412	2.43	3
CH06	7.780	5	2.437	2.43	3
CH11	7.745	5	2.462	2.43	3
802.11n(40)					
CH03	6.295	5	2.422	1.96	3
CH06	6.194	5	2.437	1.93	3
CH09	6.266	5	2.452	1.96	3

BT3.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[√ f(GHz)]	Result	Limit
1Mbps					
CH00	1.581	5	2.402	0.490	3
CH39	1.877	5	2.441	0.586	3
CH78	1.762	5	2.480	0.555	3
2Mbps					
CH00	1.454	5	2.402	0.451	3
CH39	1.646	5	2.441	0.514	3
CH78	1.691	5	2.480	0.533	3
3Mbps					
CH00	1.646	5	2.402	0.510	3
CH39	1.826	5	2.441	0.571	3
CH78	1.833	5	2.480	0.577	3



BT4.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)	(min. test separation distance,mm)]	[√ f(GHz)]	Result	Limit
CH00	0.542	5	2.402	0.168	3
CH19	0.553	5	2.440	0.173	3
CH39	0.546	5	2.480	0.172	3

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

Conclusion: No SAR is required.