

RF EXPOSURE EVALUATION METHOD

FCC ID: YH5-10DTB37

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	12.13	9.24	8.395
CH06	2437	12.44	9.47	8.851
CH11	2462	12.32	9.41	8.730
TX 802.11g Mode				
CH01	2412	11.45	9.15	8.222
CH06	2437	11.63	9.32	8.551
CH11	2462	11.28	9.22	8.356
TX 802.11n-HT20 Mode				
CH01	2412	10.26	8.10	6.457
CH06	2437	10.21	8.33	6.808
CH11	2462	10.31	8.51	7.096
TX 802.11n-HT40 Mode				
CH03	2422	9.92	8.23	6.653
CH06	2437	9.52	7.81	6.039
CH09	2452	9.72	7.75	5.957

BT3.0:

1Mbps			
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
2Mbps			
CH00	2402	1.563	1.433
CH39	2441	2.451	1.758
CH78	2480	3.467	2.222
3Mbps			
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(PK)	Peak Output Power (mW)
	(MHz)	(dBm)	dBm
CH00	2402	-2.12	0.614
CH19	2440	-2.09	0.618
CH39	2480	-2.11	0.615

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	8.395	5	2.412	2.61	3
CH06	8.851	5	2.437	2.76	3
CH11	8.730	5	2.462	2.74	3
802.11g					
CH01	8.222	5	2.412	2.55	3
CH06	8.551	5	2.437	2.67	3
CH11	8.356	5	2.462	2.62	3
802.11n(20)					
CH01	6.457	5	2.412	2.01	3
CH06	6.808	5	2.437	2.13	3
CH11	7.096	5	2.462	2.23	3
802.11n(40)					
CH03	6.653	5	2.422	2.07	3
CH06	6.039	5	2.437	1.89	3
CH09	5.957	5	2.452	1.87	3

BT3.0:

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[√ f(GHz)]	Result	Limit
1Mbps					
CH00	1.555	5	2.402	0.482	3
CH39	1.919	5	2.441	0.600	3
CH78	2.413	5	2.480	0.760	3
2Mbps					
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
3Mbps					
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
CH00	0.614	5	2.402	0.190	3
CH19	0.618	5	2.440	0.193	3
CH39	0.615	5	2.480	0.194	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.