

RF EXPOSURE TEST

FCC ID: HHOJYL-AC120

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,¹⁶ where

f_{GHz} is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

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.

WIFI 2.4G

Test Channel	Frequency	Maximum output power. Antenna port				Total Power		Maximum output power (AV)
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT A	ANT B	ANT A	ANT B	dBm	dBm	mW
TX 802.11b Mode								
CH01	2412	10.43	9.64	6.53	5.66	13.06	9.13	8.185
CH06	2437	10.75	9.73	6.74	5.86	13.28	9.33	8.570
CH11	2462	10.54	9.47	6.65	5.53	13.05	9.14	8.204
TX 802.11g Mode								
CH01	2412	10.45	9.75	5.64	4.85	13.12	8.27	6.714
CH06	2437	10.64	9.64	5.84	4.78	13.18	8.35	6.839
CH11	2462	10.76	9.75	5.56	4.35	13.29	8.01	6.324
TX 802.11n/20M Mode								
CH01	2412	8.65	7.43	5.64	4.33	11.09	8.04	6.368
CH06	2437	8.79	7.12	5.53	4.12	11.05	7.89	6.152
CH11	2462	8.33	7.06	5.53	4.05	10.75	7.86	6.109
TX 802.11n/40M Mode								
CH03	2422	10.54	9.42	6.84	5.08	13.03	9.06	8.054
CH06	2437	10.63	9.27	6.62	5.63	13.01	9.16	8.241
CH09	2452	10.87	9.64	6.48	5.38	13.31	8.98	7.907

WIFI 5G

Test Channel	Frequency	Maximum output power. Antenna port				Total Power		Maximum output power (AV)
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT A	ANT B	mW	ANT B	dBm	dBm	mW
TX 802.11a Mode								
CH149	5745	9.76	8.73	4.52	3.46	12.29	7.03	5.047
CH157	5785	9.83	8.35	4.75	3.75	12.16	7.29	5.358
CH165	5825	9.35	8.76	4.57	3.73	12.08	7.18	5.224
TX 802.11 n20M Mode								
CH149	5745	9.67	8.64	4.32	3.23	12.20	6.82	4.808
CH157	5785	9.84	8.47	4.44	3.08	12.22	6.82	4.808
CH165	5825	9.63	8.36	4.28	3.56	12.05	6.95	4.955
TX 802.11 n40M Mode								
CH151	5755	9.76	8.86	4.07	3.63	12.34	6.87	4.864
CH159	5795	9.38	8.67	4.24	3.87	12.05	7.07	5.093

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:2.4G

Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[$\sqrt{f}$ (GHz)]	Result
802.11B				
CH01	8.185	5	2.412	2.54
CH06	8.570	5	2.437	2.68
CH11	8.204	5	2.462	2.57
802.11G				
CH01	6.714	5	2.412	2.09
CH06	6.839	5	2.437	2.14
CH11	6.324	5	2.462	1.98
802.11N(20)				
CH01	6.368	5	2.412	1.98
CH06	6.152	5	2.437	1.92
CH11	6.109	5	2.462	1.92
802.11N(40)				
CH03	8.054	5	2.422	2.51
CH06	8.241	5	2.437	2.57
CH09	7.907	5	2.452	2.48

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Mode	[(max. power of channel, including tune-up tolerance, mW)]	(min. test separation distance,mm)]	[$\sqrt{f}$ (GHz)]	Result
TX 802.11a Mode				
CH149	5.047	5	2.412	2.42
CH157	5.358	5	2.437	2.58
CH165	5.224	5	2.462	2.52
TX 802.11 n20M Mode				
CH149	4.808	5	2.412	2.31
CH157	4.808	5	2.437	2.31
CH165	4.955	5	2.462	2.39
TX 802.11 n40M Mode				
CH151	4.864	5	2.412	2.33
CH159	5.093	5	2.437	2.45

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

Conclusion: no Simultaneously SAR is required