# RF EXPOSURE TEST FCC ID: 2ABWOCMP771

# 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.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	
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	SAR Test Exclusion
1900	11	22	33	44	54	Threshold (mW)
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	
3600						
MHz	30	35	40	45	50	mm
						mm
MHz	30	35	40	45	50	mm
MHz 150	30 232	35 271	40 310	45 349	50 387	mm
MHz 150 300	30 232 164	35 271 192	40 310 219	45 349 246	50 387 274	mm
MHz 150 300 450	30 232 164 134	35 271 192 157	40 310 219 179	45 349 246 201	50 387 274 224	
MHz 150 300 450 835	30 232 164 134 98	35 271 192 157 115	40 310 219 179 131	45 349 246 201 148	50 387 274 224 164	SAR Test
MHz 150 300 450 835 900	30 232 164 134 98 95	35 271 192 157 115 111	40 310 219 179 131 126	45 349 246 201 148 142	50 387 274 224 164 158	SAR Test Exclusion
MHz 150 300 450 835 900 1500	30 232 164 134 98 95 73	35 271 192 157 115 111 86	40 310 219 179 131 126 98	45 349 246 201 148 142 110	50 387 274 224 164 158 122	SAR Test
MHz 150 300 450 835 900 1500 1900	30 232 164 134 98 95 73 65	35 271 192 157 115 111 86 76	40 310 219 179 131 126 98 87	45 349 246 201 148 142 110 98	50 387 274 224 164 158 122 109	SAR Test Exclusion
MHz 150 300 450 835 900 1500 1900 2450	30 232 164 134 98 95 73 65	35 271 192 157 115 111 86 76 67	40 310 219 179 131 126 98 87	45 349 246 201 148 142 110 98 86	50 387 274 224 164 158 122 109 96	SAR Test Exclusion
MHz 150 300 450 835 900 1500 1900 2450 3600	30 232 164 134 98 95 73 65 57 47	35 271 192 157 115 111 86 76 67 55	40 310 219 179 131 126 98 87 77 63	45 349 246 201 148 142 110 98 86 71	50 387 274 224 164 158 122 109 96 79	SAR Test Exclusion

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:

≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] •
[ $\sqrt{f_{\text{(GHz)}}}$ ] $\leq$ 3.0 for 1-g SAR and $\leq$ 7.5 for 10-g extremity SAR,16 where
$\square$ f <sub>(GHz)</sub> is the RF channel transmit frequency in GHz
$\square$ Power and distance are rounded to the nearest mW and mm before calculation 17
☐ 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

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 Rated Peak RF power for tune up:

IEEE802.11 b, 8.5dBm±1
IEEE802.11 g, 8.5 dBm±1
IEEE802.11 n/HT20 8.5 d

IEEE802.11 n/HT20 , 8.5 dBm±1 IEEE802.11 n/HT40, 7.5 dBm±1

modulation	Maximum Rated Peak RF power (dBm)	Maximum Conducted Output Power (mW)	Exclusion Thresholds Results	Limit
IEEE802.11 b	9.5	8.91	2.767	3.0
IEEE802.11 g	9.5	8.91	2.782	3.0
IEEE802.11 n/HT20	9.5	8.91	2.796	3.0
IEEE802.11 n/HT40	8.5	7.08	2.222	3.0

Conclusion: No SAR is required.

Note: Exclusion Thresholds Results=[(max. power of channel, including tune-up tolerance, <math>mW)/(min. test separation distance, mm)] •  $[ \ \ \ \ \ \ \ \ \ \ \ \ ]$ 

 $f_{\mbox{\scriptsize (GHz)}}$  is the RF channel transmit frequency in GHz

☐ Distance=5mm

Maximum measured transmitter power.

#### 802.11B

frequency range (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Conducted Output Power (mW)	Exclusion Thresholds Results	Limit
2412	9.26	8.43	2.618	3.0
2437	9.15	8.22	2.566	3.0
2462	9.19	8.30	2.605	3.0

**Conclusion:** No SAR is required.

Note: Exclusion Thresholds Results=[(max. power of channel, including tune-up tolerance, <math>mW)/(min. test separation distance, mm)] •  $[\sqrt{f_{(GHz)}}]$ 

 $f_{\text{(GHz)}}$  is the RF channel transmit frequency in GHz

☐ Distance=5mm

802.11G	802.1	1G
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frequency range (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Conducted Output Power (mW)	Exclusion Thresholds Results	Limit
2412	8.93	7.82	2.429	3.0
2437	9.05	8.04	2.510	3.0
2462	8.96	7.87	2.470	3.0

**Conclusion:** No SAR is required.

Note: Exclusion Thresholds Results=[(max. power of channel, including tune-up tolerance, <math>mW)/(min. test separation distance, mm)] • [ $\sqrt{f_{(GHz)}}$ ]

 $f_{\text{(GHz)}}\,\text{is}$  the RF channel transmit frequency in GHz

☐ Distance=5mm

## 802.11N20

frequency range (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Conducted Output Power (mW)	Exclusion Thresholds Results	Limit
2412	8.43	6.97	2.165	3.0
2437	8.38	6.89	2.151	3.0
2462	8.41	6.93	2.175	3.0

**Conclusion:** No SAR is required.

Note: Exclusion Thresholds Results=[(max. power of channel, including tune-up tolerance, <math>mW)/(min. test separation distance, mm)] •  $[\sqrt{f_{(GHz)}}]$ 

f(GHz) is the RF channel transmit frequency in GHz

☐ Distance=5mm

## 802.11N 40M

frequency range (MHz)	Maximum Peak Conducted Output Power (dBm)	Maximum Conducted Output Power (mW)	Exclusion Thresholds Results	Limit
2422	7.57	5.71	1.777	3.0
2437	7.46	5.57	1.739	3.0
2452	7.52	5.65	1.770	3.0

**Conclusion:** No SAR is required.

Note: Exclusion Thresholds Results=[(max. power of channel, including tune-up tolerance, <math>mW)/(min. test separation distance, mm)] •  $[\sqrt{f_{(GHz)}}]$ 

 $f_{\left(GHz\right)}$  is the RF channel transmit frequency in GHz

☐ Distance=5mm