

Calculation and sample for Confirmation

Dear Reviewer,

As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure(MPE), Limits for General Population/Uncontrolled Exposure:

Frequency range (MHz)	Power density (mW/cm ²)
300 – 1,500	f/1500
1,500 – 100,000	1.0

The RF Exposure level is calculated using the general equation:

$$S = PG / 4\pi R^2$$

the EUT antenna gain is 3.1dBi

R = 20 cm

$\pi = 3.1416$

The power density limit is:

For 1,500 – 100,000MHz: 1.0 mW/cm^{2c}

Solving for S, the power density at 20 cm is

For WIFI:

802.11b:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412	15. 67	36. 90	3. 1	2. 0	20	0. 01499	1
2437	15. 42	34. 83	3. 1	2. 0	20	0. 01415	1
2462	15. 32	34. 04	3. 1	2. 0	20	0. 01383	1

802.11g:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412	17. 44	55. 46	3. 1	2. 0	20	0. 02253	1
2437	17. 54	56. 75	3. 1	2. 0	20	0. 02305	1
2462	17. 37	54. 58	3. 1	2. 0	20	0. 02217	1

802.11n:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412	17. 18	52. 24	3. 1	2. 0	20	0. 02122	1
2437	17. 63	57. 94	3. 1	2. 0	20	0. 02354	1
2462	17. 67	58. 48	3. 1	2. 0	20	0. 02375	1

So, the power density is kept.

Please contact us if you have any additional questions.

Best Regards

Morlab

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