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:

$$\mathbf{S = PG/ 4\pi R^2}$$

The EUT antenna gain is 2.0 dBi

R = 5 cm

π = 3.1416

The power density limit is:

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

Solving for S, the power density at 5 cm is

For WIFI:

802.11b:

Frequency(MHz)	dBm	mW	G(dBi)	Numeric	R(cm)	S(mW/cm2)	Limit(mW/cm2)
2412	18.71	74.30	2.0	1.6	5	**0.02343**	1
2437	17.9	61.66	2.0	1.6	5	**0.31106**	1
2462	18.39	69.02	2.0	1.6	5	**0.34821**	1

802.11g:

Frequency(MHz)	dBm	mW	G(dBi)	Numeric	R(cm)	S(mW/cm2)	Limit(mW/cm2)
2412	18.88	77.27	2.0	1.6	5	**0.02436**	1
2437	19.54	89.95	2.0	1.6	5	**0.45377**	1
2462	20.4	109.65	2.0	1.6	5	**0.55314**	1

802.11n (20MHz):

Frequency(MHz)	dBm	mW	G(dBi)	Numeric	R(cm)	S(mW/cm2)	Limit(mW/cm2)
2412	20.46	111.17	2.0	1.6	5	**0.03505**	1
2437	20.07	101.62	2.0	1.6	5	**0.51267**	1
2462	20.70	117.49	2.0	1.6	5	**0.59270**	1

802.11n (40MHz)

Frequency(MHz)	dBm	mW	G(dBi)	Numeric	R(cm)	S(mW/cm2)	Limit(mW/cm2)
2422	19.55	90.16	2.0	1.6	5	**0.02843**	1
2437	20.26	106.17	2.0	1.6	5	**0.53560**	1
2452	20.80	120.23	2.0	1.6	5	**0.60651**	1

So, the power density is kept.

Please contact us if you have any additional questions.
Best Regards
Shanghai Skylabs Co., Ltd.
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