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/cm²)*
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 1.0 dBi

R = 20 cm

π = 3.1416

The power density limit is:

For 1,500 – 100,000MHz: 1.0mW/cm^{2c}

Solving for S, the power density at 20 cm is

Calculated Result and Limit:

Mode	Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R （cm）	S (mW/cm2)	Limit (mW/cm2)
IEEE 802.11b (ANT1)	2412	19.13	81.85	1.0	1.3	20	**0.02050**	1
	2437	18.95	78.52	1.0	1.3	20	**0.01967**	1
	2462	19.03	79.98	1.0	1.3	20	**0.02003**	1
IEEE 802.11b (ANT2)	2412	19.11	81.47	1.0	1.3	20	**0.02040**	1
	2437	18.92	77.98	1.0	1.3	20	**0.01953**	1
	2462	19.17	82.60	1.0	1.3	20	**0.02069**	1

Mode	Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R （cm）	S (mW/cm2)	Limit (mW/cm2)
IEEE 802.11g (ANT1)	2412	18.91	77.80	1.0	1.3	20	**0.01949**	1
	2437	19.10	81.28	1.0	1.3	20	**0.02036**	1
	2462	19.07	80.72	1.0	1.3	20	**0.02022**	1

IEEE 802.11g (ANT2)	2412	19.06	80.54	1.0	1.3	20	**0.02017**	1
	2437	19.21	83.37	1.0	1.3	20	**0.02088**	1
	2462	19.03	79.98	1.0	1.3	20	**0.02003**	1

Mode	Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R （cm）	S (mW/cm2)	Limit (mW/cm2)
IEEE 802.11n-20MHz (ANT1)	2412	18.44	69.82	1.0	1.3	20	**0.01749**	1
	2437	18.32	67.92	1.0	1.3	20	**0.01701**	1
	2462	18.37	68.71	1.0	1.3	20	**0.01721**	1
IEEE 802.11n-20MHz (ANT2)	2412	18.34	68.23	1.0	1.3	20	**0.01709**	1
	2437	18.23	66.53	1.0	1.3	20	**0.01666**	1
	2462	18.31	67.76	1.0	1.3	20	**0.01697**	1
IEEE 802.11n-20MHz (ANT1&2)	2412	21.40	138.04	1.0	1.3	20	**0.03457**	1
	2437	21.29	134.59	1.0	1.3	20	**0.03371**	1
	2462	21.35	136.46	1.0	1.3	20	**0.03418**	1

Mode	Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R （cm）	S (mW/cm2)	Limit (mW/cm2)
IEEE 802.11n-40MHz (ANT2)	2422	18.14	65.16	1.0	1.3	20	**0.01632**	1
	2437	18.47	70.31	1.0	1.3	20	**0.01761**	1
	2452	18.39	69.02	1.0	1.3	20	**0.01729**	1
IEEE 802.11n-40MHz (ANT2)	2422	18.29	67.45	1.0	1.3	20	**0.01689**	1
	2437	18.26	66.99	1.0	1.3	20	**0.01678**	1
	2452	18.33	68.08	1.0	1.3	20	**0.01705**	1
IEEE 802.11n-40MHz (ANT1&2)	2422	21.23	132.74	1.0	1.3	20	**0.03325**	1
	2437	21.38	137.72	1.0	1.3	20	**0.03441**	1
	2452	21.37	137.09	1.0	1.3	20	**0.03433**	1

So, the power densityis kept.

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