

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 2.3dBi

R = 20 cm

$\pi = 3.1416$

The power density limit is:

For 1,500 – 100,000MHz: 1.0 mW/cm²

Solving for S, the power density at 20 cm is

For WIFI:

Tune up power tolerance and use tune up maximum power to assess the emission explosure, the worst configure is recorded and as blow:

Mode	Transmit PK Power(dBm) Max	Transmit PK Power(dBm) Min	Power Tolerance (dBm)	Tune up Maximum Power(dBm)	Antenna Options
802.11a	11.96	11.05	11 ± 1	12	An 1
802.11a	8.93	7.98	8 ± 1	9	An 2

Test at 802.11a:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R(cm)	S (mW/cm ²)	Limit (mW/cm ²)	remark
2462	12	15.85	1.2	1.3	20	0.00416	1	Ant1
2462	9	7.94	1.2	1.3	20	0.00208	1	Ant2
/	/	/	1.2	1.3	20	0.00624	1	Ant1+Ant2

Note: separately the MPE result for each antenna is provided, then sum the total of them to compare the Limit.

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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