

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 dBi

R = 20 cm

π = 3.1416

The power density limit is:

For 1,500 – 100,000MHz: 1.0 mW/cm²

Solving for S, the power density at 2 cm is

For BT 4.1 BR/EDR

GFSK

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2402–2480	3	2.00	2.00	1.6	20	0.00063	1

π /4-DQPSK

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2402–2480	–3	0.50	2.00	1.6	20	0.00016	1

8-DPSK

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2402–2480	–3	0.50	2.00	1.6	20	0.00016	1

For WIFI:

802.11b:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412-2462	18	63.10	2.00	1.6	20	0.01989	1

802.11g:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412-2462	11	12.59	2.00	1.6	20	0.00397	1

802.11n-20:

Frequency (MHz)	dBm	mW	G (dBi)	Numeric	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)
2412-2462	10	10.00	2.00	1.6	20	0.00315	1

So, the power density is kept.

Please contact us if you have any additional questions.

Best Regards

Skylabs

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