

8. RADIO FREQUENCY EXPOSURE

8.1. Limit

According to §1.1310 and §2.1091 RF exposure is calculated.

Table: Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Power Density (S) (mW/cm ²)
0.3–1.34	*(100)
1.34–30	*(180/f ²)
30–300	0.2
300–1500	f/1500
1500–100,000	1.0

F = frequency in MHz

* = Plane-wave equivalent power density

Maximum Permissible Exposure

The MPE was calculated at 20cm to show compliance with the power density limit.

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

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna.

Note:

1. Manufacturer declared that the maximum antenna gain is 2.0 dBi(Max.) for 2412~2462MHz.
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

8.2 Test Results

Standalone MPE

2.4G wifi:

Test	Channel	ANT Power (dBm)	ANT Max. Tune Up Power (dBm)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
IEEE 802.11b	1	19.75	19.0±1.0	100.0000	0.0314	1.0
	6	19.36	19.0±1.0	100.0000	0.0314	1.0
	11	19.50	19.0±1.0	100.0000	0.0314	1.0
IEEE 802.11g	1	15.64	15.0±1.0	39.8107	0.0125	1.0
	6	15.67	15.0±1.0	39.8107	0.0125	1.0
	11	15.80	15.0±1.0	39.8107	0.0125	1.0
IEEE 802.11n20	1	13.44	13.0±1.0	25.1189	0.0079	1.0
	6	13.02	13.0±1.0	25.1189	0.0079	1.0
	11	13.05	13.0±1.0	25.1189	0.0079	1.0

Note: The estimation distance is 20cm

Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.