

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 4.0dBi(Max.) .
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

8.2 Test Results

2.4G wifi:

Test	Channel	ANT Power (dBm)	ANT Max. Tune Up Power (mW)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
802.11b	1	15.53	15.0 ± 1.0	39.8107	0.0199	1.0
	6	15.21	15.0 ± 1.0	39.8107	0.0199	1.0
	11	15.73	15.0 ± 1.0	39.8107	0.0199	1.0
802.11g	1	15.51	15.0 ± 1.0	39.8107	0.0199	1.0
	6	15.63	15.0 ± 1.0	39.8107	0.0199	1.0
	11	15.12	15.0 ± 1.0	39.8107	0.0199	1.0
802.11n20	1	15.24	15.0 ± 1.0	39.8107	0.0199	1.0
	6	15.10	15.0 ± 1.0	39.8107	0.0199	1.0
	11	15.22	15.0 ± 1.0	39.8107	0.0199	1.0
802.11n40	3	15.41	15.0 ± 1.0	39.8107	0.0199	1.0
	6	15.32	15.0 ± 1.0	39.8107	0.0199	1.0
	9	15.40	15.0 ± 1.0	39.8107	0.0199	1.0

Conclusion

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