

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 5.0 dBi(Max.) for 5190.00~5230.00MHz/5745.00~5825.00MHz.
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

5G-chain 0

Test	Frequency	ANT Power (dBm)	ANT Max. Tune Up Power (dBm)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
/	5190	17.930	18.0±1.0	79.4328	0.0499	1.0
	5230	18.000	18.0±1.0	79.4328	0.0499	1.0
	5745	14.210	16.0±2.0	63.0957	0.0397	1.0
	5785	14.470	16.0±2.0	63.0957	0.0397	1.0
	5825	16.430	16.0±2.0	63.0957	0.0397	1.0

5G-chain 1

Test	Frequency	ANT Power (dBm)	ANT Max. Tune Up Power (dBm)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
/	5190	17.620	18.0±1.0	79.4328	0.0499	1.0
	5230	18.550	18.0±1.0	79.4328	0.0499	1.0
	5745	14.050	16.0±2.0	63.0957	0.0397	1.0
	5785	14.370	16.0±2.0	63.0957	0.0397	1.0
	5825	16.740	16.0±2.0	63.0957	0.0397	1.0

5G-chain0 + chain1

Test	Frequency	ANT Power (dBm)	ANT Max. Tune Up Power (dBm)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
/	5190	20.807	21.0±1.0	158.4893	0.0996	1.0
	5230	21.313	21.0±1.0	158.4893	0.0996	1.0
	5745	17.159	18.0±2.0	100.0000	0.0629	1.0
	5785	17.449	18.0±2.0	100.0000	0.0629	1.0
	5825	19.616	18.0±2.0	100.0000	0.0629	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.