

FCC§1.1310&§2.1093- RF EXPOSURE

Applicable Standard

RF Exposure for devices that operate above 6GHz (§ 1.1310)

According to subpart 2.1093(d): Portable devices that transmit at frequencies above 6GHz shall be evaluated in terms of the MPE limits specified in table 1 to 47 CFR 1.1310. A minimum separation distance applicable to the operating configurations and exposure conditions of the device shall be used for the evaluation. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for device operating above 6GHz should be made at a minimum distance of 0.5cm from the radiating source.

Limits for General Population/Uncontrolled Exposure

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Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Frequency (MHz)	Tune up EIRP		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBm)	(mW)			
6489.6	-6.0	0.25	20	0.00005	1

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance