

* Standalone SAR test exclusion considerations

1. Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

a) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E 2, H 2 or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E 2, H 2 or S (minutes)
0.3-3.0	614	1.63	(100)*	30
3.0-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.0	30

Note : f=frequency in MHz

***=Plane-wave equivalent power density**

2. MPE Calculation Method

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

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

3. Calculated Result and Limit

(R = 20cm)

Mode	Channel	Peak Output Power		Antenna Gain		Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Result
		(dBm)	(mW)	(dBi)	(numeric)			
GFSK	Low	0.600	1.148	1.990	1.581	0.000361	1	PASS
	Middle	0.180	1.042	1.990	1.581	0.000328	1	PASS
	High	-2.150	0.610	1.990	1.581	0.000192	1	PASS
$\pi/4$ DQPSK	Low	2.720	1.871	1.990	1.581	0.000588	1	PASS
	Middle	1.950	1.567	1.990	1.581	0.000493	1	PASS
	High	-0.450	0.902	1.990	1.581	0.000284	1	PASS
8DPSK	Low	2.900	1.950	1.990	1.581	0.000613	1	PASS
	Middle	2.140	1.637	1.990	1.581	0.000515	1	PASS
	High	-0.200	0.955	1.990	1.581	0.000300	1	PASS
NII	Low	0.290	1.069	1.370	1.371	0.000292	1	PASS
	Middle	0.340	1.081	1.370	1.371	0.000295	1	PASS
	High	0.090	1.021	1.370	1.371	0.000278	1	PASS