

Prediction of MPE at a given distance

Product Name: Android Rear Seat Entertainment System
Model No: PD1317
FCC ID: 2BUXM-PD1317

1. RF Exposure Evaluation

FCC KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

2. Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

2. Test Procedure

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Equation from page 18 of OET Bulletin 65, Edition 97-01

Where:

S = power density

P = power input to the antenna

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

R = distance to the centre of radiation of the antenna

EUT RF EXPOSURE

Frequency (MHz)	Maximum Output power (dBm)	Tune up Produce power	Maximum peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Limits for General Population/Uncontrolled Exposure (mW/cm ²)
BLE									
2402	-1	-1±1	0	1.000	1.5	1.41	20	0.000281	1
EDR									
2402	7.07	7±1	8	6.310	1.5	1.41	20	0.001773	1
2.4GWIFI									
2462	17.58	17±1	17	50.119	1.5	1.41	20	0.014084	1
5.2GWIFI									
5200	14.19	14±1	15	31.623	1.5	1.41	20	0.008886	1
5.3GWIFI									
5310	15.62	15±1	16	39.811	5.64	3.66	20	0.029022	1
5.6GWIFI									
5700	16.56	16±1	17	50.119	5.64	3.66	20	0.036537	1
5.8GWIFI									
5825	16.95	16±1	17	50.119	5.64	3.66	20	0.036537	1
4G-B2									
1909.3	20.28	20±1	21	125.893	3.98	2.50	20	0.062623	1
4G-B5									
836.5	24.2	24±1	25	316.228	2.58	1.81	20	0.113954	1
4G-B7									
2505	19.94	19±1	20	100.000	2.14	1.64	20	0.032563	1
4G-B12									
701.5	23.98	23±1	24	251.189	1.62	1.45	20	0.072566	1
4G-B38									
2615	17.69	17±1	18	63.096	2.26	1.68	20	0.021122	1

4G-B40									
2350	18.87	18±1	19	79.433	1.75	1.50	20	0.023645	1
4G-B41									
2506	17.99	18±1	19	79.433	3.05	2.02	20	0.031896	1
4G-B66									
1711.5	20.49	20±1	21	125.89 3	2.04	1.60	20	0.040062	1

Note: Just the worst case mode was shown in report.

EUT RF Exposure Evaluation simultaneous transmission operations

According to 865664D02 2.2 d) 1):

The sum of the ratios of the spatially averaged results to the applicable frequency dependent MPE limits :

Simultaneous transmission mode	The sum of the ratios	SUM	Limit
EDR+2.4GWIFI+5GWIFI+4G	0.001773+0.014084+0.036537+0.113954	0.166348	1
conclusion :0.166348< 1.0, So there is no sar requirement			