Prediction of MPE at a given distance

Product Name: car navigation

Model No: D9863

FCC ID: 2BS6T-D9863

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)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm^2)	Limits for General Population/ Uncontrolled Exposure (mW/cm^2)
EDR							
2402	2.42	1.746	1.5	1.413	20	0.000491	1
802.11n20							
2412	16.80	47.863	1.5	1.413	20	0.013450	1
5.2Gwifi							
5240	15.33	34.119	3.35	2.163	20	0.014680	1
5.8Gwifi							
5755	15.05	31.989	3.35	2.163	20	0.013764	1
4G-B2							
1880	22.99	199.067	1.5	1.41	20	0.055941	1
4G-B5							
824.7	23.91	246.037	0.8	1.20	20	0.058848	0.5498
4G-B7							
2505	23.04	201.372	1.8	1.51	20	0.060636	1
4G-B38							
2595	22.9	194.984	1.8	1.51	20	0.058712	1
4G-B40							
2310	22.29	169.434	1.8	1.51	20	0.051019	1
4G-B41							
2685	23.75	237.137	1.5	1.41	20	0.066639	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+2.4G WIFI+5GWIFI+4G	0.000491+0.013450+0.014680+0.058848	0.087469	1
conclusion :0.087469< 1.0, So there is no sar requirement			