RF Exposure evaluation for mobile use

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RF Exposure Evaluation

Standards
OET Bulletin 65 Edition 97-01 August 1997
FCC 47 CFR §1.1307
FCC 47 CFR §1.1310
RSS-102, issue 5

Test limits

As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure.

Frequency range (MHz)	*Power density (mW/cm²)*
300 – 1,500	f/1500
1,500 – 100,000	1.0

Equation OET bulletin 65, page 18, edition 97-01: $S = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$

Where:

S = power density // P = power input to the 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

Band	Mode	Duty Cycle	Frequency (MHZ)	Maximum Conducted output power (dBm)	Equivalent conducted output power (mW)	FCC MPE Limit (mW/cm²)	MPE Value using Max gain of 2 dBi	Separation distance (cm)	Verdict
Classic BT	GFSK 1-DH1	100%	2480.0	12.2	16.59	1.000	0.0052	20	Pass
BLE	GFSK 1-DH1	100%	2480.0	7.7	5.89	1.000	0.0019	20	Pass
WLAN 2.4	DSSS	100%	2437.0	17.50	56.23	1.000	0.0177	20	Pass
WLAN 5	OFDM	100%	5745	19.80	95.50	1.000	0.0301	20	Pass
SUM	all	100%	all	Max.	-	1.000	0.0549	20	Pass

Yours sincerely,

Jmad Hijje

$$\sum_{1}^{N} \frac{S_{eqn}}{S_{Limn}} = \frac{S_{eq1}}{S_{Lim1}} + \frac{S_{eq2}}{S_{Lim2}} + \ldots + \frac{S_{eqN}}{S_{LimN}} \leq 1$$