



RF Exposure evaluation

Model: Service and Entertainment Module

FCC ID: LTQVTSEM2

Standards
OET Bulletin 65 Edition 97-01 August 1997
FCC 47 CFR §1.1307
FCC 47 CFR §1.1310

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/cm^2)
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



Technology	Frequency at highest power (MHz)	Antenna Gain (dBi)	Antenna Gain -numeric- (mW/cm ²)	Output Power conducted (dBm)	Output Power conducted (mW)	Output Power (EIRP) (dBm)	Output Power (EIRP) (mW)
BT	2441	0.9	1.2303	5.30	3.3884	6.20	4.1687
WLAN 2.4	2472	0.9	1.2303	15.00	31.6228	15.90	38.9045
WLAN 5	5240	3.7	2.3442	14.10	25.7040	17.80	60.2560

Distance to antenna R = 20cm

Remark:

- only worst-case values are listed in the table above

Co-Location Considerations

The calculation below is used to consider situations in which simultaneous exposure to fields of different frequencies occur. The calculation is performed by the sum of each relative exposure for each equipment according to the following criteria.

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

Where:

S_{eq} is the power density of the electromagnetic field at a given distance by a specific transmitter and a defined frequency.

S_{lim} is the MPE limit for the frequency being evaluated.

Assessment of Co-Location for FCC:

Technology	Power Density value (mW/cm ²)	FCC Limit (mW/cm ²)	Margin to FCC Limit (mW/cm ²)
BT	0.0008	1.0000	0.9992
WLAN 2.4	0.0077	1.0000	0.9923
WLAN 5	0.0120	1.0000	0.9880
Co-Location	0.0206	1.0000	0.9794

Yours sincerely,

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