



RF Exposure evaluation

Model: **Daimler RSE**

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

Operational Bands	Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain -numeric- (mW/cm ²)	Output Power -conducted- (dBm)	Output Power -conducted- (mW)	FCC Limit (mW/cm ²)	Power Density value (mW/cm ²)	Margin to FCC Limit (mW/cm ²)
Bluetooth	2480	-1.14	0.7691	1.30	1.35	1.00	0.0002	0.9998
WLAN 2.4 GHz (Android)	2472	-1.14	0.7691	13.50	22.39	1.00	0.0034	0.9966
WLAN 2.4 GHz (Linux)	2437	-0.1	0.9772	18.00	63.10	1.00	0.0123	0.9877
WLAN 5 GHz (Android)	5180	4.79	3.0130	7.50	5.62	1.00	0.0034	0.9966
WLAN 5 GHz (Linux)	5785	5.7	3.7154	7.90	6.17	1.00	0.0046	0.9954

Distance R=20cm



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 Transmission for FCC

	BT	WLAN 2.4 GHz (Android)	WLAN 2.4 GHz (Linux)	WLAN 5 GHz (Android)	WLAN 5 GHz (Linux)
(S_{eq} / S_{Lim})	0.0002	0.0034	0.0123	0.0034	0.0046
Sum of (S_{eqn} / S_{Limn})	0.0239				
Limit	1				
Assessment	passed				

Yours sincerely,

Teoman Soner Sunar