

RF Exposure Evaluation according to KDB 447498 D01 v06

Report identification number: 1-5761/23-01-08

Certification numbers and labeling requirements	
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1. MPE at given distance (KDB 447498 D01 General RF Exposure Guidance v06)

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

$$S = PG / 4\pi R^2$$

where: S = Power density
P = Power input to the antenna
G = Antenna gain
R = Distance to the center of radiation of the antenna
PG = Output Power including antenna gain

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm ²)	Averaging Time (minutes)
300 -1500	f/1500	30
1500 - 100000	1.0	30

where f = Frequency (MHz)

2. EUT technologies

Declared minimum safety distance: **30 cm**

SRD Technology	Frequency [MHz]		Reference	Output Power [dBm]			Power Density [mW/cm ²]		Share of Limit
	f _{Min}	f _{Max}		P _{ERP}	P _{EIRP}	P _{RF Exp}	S _{Result}	S _{Limit}	%
Bluetooth	2402	2480	A	N/A	9.2	9.2	0.001	1.000	0.07%
Bluetooth LE	2402	2480	B	N/A	9.0	9.0	0.001	1.000	0.07%
WLAN 2.4 GHz	2412	2462	C	N/A	33.9	33.9	0.215	1.000	21.46%
WLAN U-NII-1	5180	5240	D	N/A	28.5	28.5	0.063	1.000	6.26%
WLAN U-NII-2A	5260	5320	D	N/A	28.6	28.6	0.064	1.000	6.41%
WLAN U-NII-2C	5500	5700	D	N/A	29.9	29.9	0.086	1.000	8.64%
WLAN U-NII-3	5745	5825	D	N/A	33.9	33.9	0.217	1.000	21.70%

Note:

- EIRP Output Power [dBm] = Conducted Output Power [dBm] + Antenna Gain (dBi)
- Worst case of WLAN 5 GHz is marked green.

Referenced Documents:

#	Results from:
A	Test Report 1-5761/23-01-02
B	Test Report 1-5761/23-01-03
C	Test Report 1-5761/23-01-04
D	Test Report 1-5761/23-01-05

3. Collocation overview:

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0 , according to calculated/estimated, numerically modeled, or measured field strengths or power density.

Technology	Share of Limit [%]
Bluetooth	0.07%
Bluetooth LE	0.07%
WLAN 2.4 GHz	21.46%
WLAN U-NII-3	21.70%
Sum	43.30%

4. Conclusion

This prediction demonstrates the following:

The power density levels for FCC at a distance of 30 cm are below the maximum levels allowed by regulations.

Conclusion: RF exposure evaluation is not required.