

RF Exposure Evaluation according to KDB 447498 D01 v06

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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

Technologies:	Max. measured E.I.R.P. per BW=50MHz:		BW (MHz)	Max. declared E.I.R.P. for Full BW: Max.decl.E.I.R.P.@50MHz x (BW/50MHz)	Equivalent EIRP (dBm)	#
	(dBm)	(mW)				
UWB 6000 to 8500 MHz	-9.86	0.103	649.6	0.103mW x 12.992 = 1.34 mW	1.27	B

Declared minimum safety distance: **20 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 LE	2402	2480	A	N/A	9.2	9.2	0.0017	1.00	0.17%
UWB	6000	8500	B	N/A	1.3	1.3	0.0003	1.00	0.03%

Referenced Documents:

#	Results from:
A	Cetecom advanced GmbH report 1-5884/23-01-22, page 18 max. EIRP
B	Cetecom advanced GmbH report 1-5884/23-01-19,DKA1-Report: pg. 12 & 16

3. Collocation overview:

Technology	Share of Limit
Bluetooth LE	0.17%
UWB	0.03%
Sum	0.20%

4. Conclusion

This prediction demonstrates the following:

The power density levels for FCC at a distance of 20 cm are below the maximum levels allowed by regulations.

Conclusion: RF exposure evaluation is not required.