



BNetzA-CAB-02/21-102



Deutsche  
Akkreditierungsstelle  
D-PL-12076-01-04

## RF Exposure Evaluation according to KDB 447498 D01 v06

Report identification number: TR23-1-0068401T007a

Certification numbers and labeling requirements	
FCC ID	VW3DIW377D

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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 <sup>2</sup> )	Averaging Time (minutes)
300 - 1500	f/1500	30
1500 - 100000	1.0	30

where f = Frequency (MHz)

## 2. EUT technologies

Declared minimum safety distance: **20 cm**

SRD Technology	Frequency [MHz]		Reference #	Output Power [dBm]			Power Density [mW/cm <sup>2</sup> ]		Share of Limit %
	f <sub>Min</sub>	f <sub>Max</sub>		P <sub>ERP</sub>	P <sub>EIRP</sub>	P <sub>RF Exp</sub>	S <sub>Result</sub>	S <sub>Limit</sub>	
Bluetooth Classic	2402	2480	A	N/A	10.9	<b>10.9</b>	<b>0.00</b>	<b>1.00</b>	<b>0.24%</b>
Bluetooth LE	2402	2480	B	N/A	9.2	<b>9.2</b>	<b>0.00</b>	<b>1.00</b>	<b>0.17%</b>
WLAN 2.4 GHz	2412	2462	C	N/A	27.6	<b>27.6</b>	<b>0.11</b>	<b>1.00</b>	<b>11.32%</b>
WLAN 5 GHz	5180	5240	D	N/A	29.6	<b>29.6</b>	<b>0.18</b>	<b>1.00</b>	<b>17.94%</b>
WLAN 5 GHz	5260	5320	D	N/A	29.1	<b>29.1</b>	<b>0.16</b>	<b>1.00</b>	<b>15.99%</b>
WLAN 5 GHz	5500	5700	D	N/A	28.9	<b>28.9</b>	<b>0.15</b>	<b>1.00</b>	<b>15.44%</b>
WLAN 5 GHz	5745	5825	D	N/A	29.3	<b>29.3</b>	<b>0.17</b>	<b>1.00</b>	<b>16.93%</b>

Referenced Documents:

#	Results from:
A	Test Report TR23-1-0068401T001a, pp. 21 & 26
B	Test Report TR23-1-0068401T002a, pp. 21 & 25
C	Test Report 23-1-0068401T003a, pp. 22 & 24
D	Test Report 23-1-0068401T004a, pp. 29 & 32

### 3. Collocation overview:

Technology	Share of Limit [%]
Bluetooth Classic/LE	0.24%
WLAN 2.4 GHz	11.32%
WLAN 5 GHz	17.94%
Sum	<b>29.50%</b>

### 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.