

RF Exposure Evaluation according to KDB 447498 D01 v06

Report identification number: 1-5003/22-01-13_MPE_FCC

Certification numbers and labeling requirements	
FCC ID	2AJW5ACCM1

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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: **20 cm**

Cellular Technology	Frequency [MHz]		Reference	Output Power [dBm]				Power Density [mW/cm²]		Share of Limit
	f _{Min}	f _{Max}		Conducted		Correction		S _{Result}	S _{Limit}	%
			P _{Meas}	P _{Max}	Peak Gain	P _{RF Exp}				
GSM 850	824	849	A	31.55	32.00	-6.29	22.71	0.04	0.55	6.76%
GSM 1900	1850	1910	B	28.55	30.50	2.75	30.25	0.21	1.00	21.07%
WCDMA Band II	1850	1910	B	23.08	24.00	2.75	26.75	0.09	1.00	9.41%
WCDMA Band V	824	849	A	23.27	24.00	-6.29	17.71	0.01	0.55	2.14%
LTE Band 2	1850	1910	C	23.47	25.00	2.75	27.75	0.12	1.00	11.85%
LTE Band 4	1710	1755	D	23.96	25.00	2.31	27.31	0.11	1.00	10.71%
LTE Band 5	824	849	E	24.04	25.00	-6.29	18.71	0.01	0.55	2.69%
LTE Band 12	699	716	F	24.39	25.00	0.88	25.88	0.08	0.47	16.53%
LTE Band 13	777	787	G	24.07	25.00	-1.93	23.07	0.04	0.52	7.79%
LTE Band 26	814	849	H	24.13	25.00	-6.29	18.71	0.01	0.54	2.72%

Notes:

- GSM corrected by 10 log (4/8) = - 3 dB (time slots considerations)
- Max rated conducted output power taken from customer's tune up info

Referenced Documents:

#	Results from:
A	Test Report Module PCB - GSM, WCDMA, LTE Part 1: Page 53
B	Test Report Module PCB - GSM, WCDMA, LTE Part 2: Page 106
C	Test Report Module PCB - GSM, WCDMA, LTE Part 2: Page 108
D	Test Report Module PCB - GSM, WCDMA, LTE Part 2: Page 157
E	Test Report Module PCB - GSM, WCDMA, LTE Part 1: Page 55
F	Test Report Module PCB - GSM, WCDMA, LTE Part 2: Page 158
G	Test Report Module PCB - GSM, WCDMA, LTE Part 2: Page 159
H	Test Report Module PCB - GSM, WCDMA, LTE Part 1: Page 56

SRD Technology	Frequency [MHz]		Reference	Output Power [dBm]			Power Density [mW/cm²]		Share of Limit
	f _{Min}	f _{Max}	#	P _{ERP}	P _{EIRP}	P _{RF Exp}	S _{Result}	S _{Limit}	%
Bluetooth LE	2402	2480	H	N/A	3.0	3.0	0.00	1.00	0.04%

Referenced Documents:

#	Results from:
H	Test Report 1-5003_22-01-12: Page 18

3. Collocation overview:

Technology	Share of Limit [%]
GSM 1900	21.07%
Bluetooth LE	0.04%
Sum	21.11%

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.