

7.9 RF Exposure Evaluation

7.9.1 Requirement

RF Exposure Requirements:

47 CFR §1.1307(b)

RF Radiation Exposure Limits:

47 CFR §1.1310

RF Radiation Exposure Guidelines:

FCC OST/OET Bulletin Number 65

EUT Frequency Band:

3240-4830MHz

6215-7000MHz

1) SAR Test Exclusion for <6GHz

According to the procedure in KDB447498 (v05r02) section 4.3,

1g-SAR testing is excluded if the following criteria is met.

$$(P/d) * \sqrt{f} \leq 3.0 \text{ for 1-g SAR}$$

10g-SAR testing is excluded if the following criteria is met.

$$(P/d) * \sqrt{f} \leq 7.5 \text{ for 10-g SAR}$$

Where

P is the time averaged maximum conducted power in mW

d minimum separation distance in mm

f is the frequency in GHz

The distance between the antenna and human body is 5 mm. The calculation was based on the distance of 5 mm.

Radio	Frequency (MHz)	Max Radiated Power (dBm)	Max Radiated Output Power (mW)	Measurement distance (mm)	Test Exclusion Threshold Result
UWB	3240-4830MHz	-2.43	0.571	5	0.251

The above results show that the device is excluded for both standalone 1g-SAR and 10g-SAR testing.

2) MPE Calculation for >6GHz

The SAR Test Exclusion Threshold of the guidance is limited only up to 6GHz. According to OET Bulletin 65, the portable device operating at frequencies above 6GHz is evaluated in terms of MPE limits.

Radio	Frequency (MHz)	Max Radiated Power (dBm)	Max Radiated Output Power (mW)	Separation distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
UWB	6215-7000	-5.63	0.274	0.5	0.087	1

The above results show that the device complies with the MPE requirement with 5mm separation distance.