

FCC RF Exposure evaluation

FCC ID: JAR63-VT03388

Exposure Category: General population/uncontrolled environment
Applicable Standard(s): [FCC 47CFR1.1307, General RF Exposure Guidance v01](#)
[FCC Part 2, 2.1.1000](#)

According to FCC 47CFR 1.1307 General RF Exposure Guidance v01 Section 1.1.1 for Standard SAR test exclusion considerations: "Unless specifically required by the published RF exposure FCC procedures, standards 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for turn-up tolerance, and the minimum test separation distance required for the exposure conditions." The minimum test separation distance defined in 1.1.1 is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the test site factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the test separation distance applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable test platform requirements, according to the required published RF exposure FCC procedures. When no other RF exposure testing or reporting are required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for SAR test exclusion. When required, the device specific conditions described in the other published RF exposure FCC procedures must be satisfied before applying these SAR test exclusion provisions, for example, handheld PTT two-way radio, handheld, laptop, smartphone, etc."

a) For 100 MHz to 6 GHz and test separation distance ≥ 30 mm, the 1-g and 10-g SAR test exclusion threshold are determined by the following:

$$[P_{max} \cdot power \text{ of channel including turn-up tolerance, mW}] \cdot [min. test separation distance, mm]^{-2} \cdot [T_{max}] < 1.0 \text{ for 1-g SAR and } < 1.0 \text{ for 10-g extremity SAR, "a" above.}$$

- $f_{channel}$ is the RF channel channel frequency in GHz
- Power and distance are rounded to the nearest mW and/or mm before calculation"
- The result is rounded to one decimal place for comparison
- 1.0 and 1.0 are referred to as the numeric threshold in the step b) below

The test evaluations are applicable only when the minimum test separation distance is ≥ 30 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 30 mm, a distance of 30 mm according to 1.1.1 is applied to determine SAR test exclusion.

Conducted Power (can use average values, but Peak values were applied for calculation, representing the worst case)

Mode: BT	Channel	Frequency (GHz)	Measured (dBm)	Measured (mW)	Target (dBm)	Tolerance \pm (dB)
OFF	25	2.42	1.58	0.018	3.0	0.3
	38	2.441	1.29	0.008	3.0	0.3
	75	2.480	1.39	0.008	3.0	0.3

Evaluation Results:

Band / Mode (worst case)	f (GHz)	Antenna Distance (mm)	RF output power (including turn-up tolerance)			SAR Test Exclusion Threshold	SAR Test Exclusion Conclusion
			dBm	mW	mW (round-up)		
BT - OFF	1.48	0	1.3	0.01	0	0.008 @ 3.0	Pass