

FCC ID: 2ARN3-022611TX

Portable device

According to §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to KDB447498 D01 General RF Exposure Guidance V06

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

f(GHz) is the RF channel transmit frequency in GHz;

Power and distance are rounded to the nearest mW and mm before calculation;

The result is rounded to one decimal place for comparison;

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

We use 5mm as separation distance to calculate.

Maximum measured transmitter power:

UHF

	Channel Freq. (MHz)	Max Transmit Power (dBm)	Max tune-up power (dBm)	Result calculation	1-g SAR
GFSK	550.0	1.21	2	0.24	3.0
	579.0	1.12	2	0.24	3.0
	607.9	0.14	1	0.20	3.0

BLE

	Channel Freq. (MHz)	Max Transmit Power (dBm)	Max tune-up power (dBm)	Result calculation	1-g SAR
GFSK 1M	2402	4.35	5	0.98	3.0
	2440	4.81	5	0.99	3.0
	2480	5.92	6	1.25	3.0
GFSK 2M	2402	4.37	5	0.98	3.0
	2440	4.83	5	0.99	3.0
	2480	6.06	7	1.58	3.0

GFSK

Main Power: 93.27dBμV/m=93.27-95.2=-1.93dBm

Greater than 1G: -1.93dBm

	Channel Freq. (MHz)	Max Transmit Power (dBm)	Max tune-up power (dBm)	Result calculation	1-g SAR
GFSK	2402	-1.93	-1	0.25	3.0

The worst total RF exposure as follows:

$$\text{UHF} + \text{BLE} + \text{GFSK}: 0.24/3.0 + 1.58/3.0 + 0.25/3.0 = 0.08 + 0.5266 + 0.0833 = 0.69$$

Conclusion:

For the max result : $0.69 \leq 1.0$, No SAR is required.