

FCC ID : 2A023-BGK04

➤ **Test Standards and Limits**

1. According to KDB 447498 D01 v06, Section 4.3.1

2. FCC Radiofrequency radiation exposure limits:

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:

$[(\text{max power of channel})/(\text{min test separation distance})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

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 according to 4.1 f) is applied to determine SAR test exclusion.

For 2.4G band device, the limit of worse case is

$$P_{\text{max}} \leq 3.0 \cdot D_{\text{min}} / f = 3.0 \cdot 5 / 2.480 = 9.525 \text{ mW}$$

➤ **Measurement and Calculation**

1. Maximum transmit power

Antenna Gain:	2.62 dBi
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Test Mode	Modulation	Measurement Level (dBm)
SRD	GFSK	-21.9*
BLE	GFSK	-7.26
* $\text{EIRP}[\text{dBm}] = E[\text{dB}\mu\text{V/m}] + 20 \log(d[\text{meters}]) - 104.77$		

2. MPE Calculation

The Max Conducted Peak Output Power is -7.26 dBm.

The Max Antenna Gain is 2.62 dBi.

According to the formula. calculate the EIRP test result:

$$\text{EIRP} = P \times G = 0.19 \text{ mW} \times 1.63 = 0.31 \text{ mW} < 9.525 \text{ mW}$$

So the SAR report is not required.

-End of the Report-