



RF EXPOSURE ANALYSIS

<u>Product</u>	<u>FCC ID</u>
BGM11S1A / BGM11S2A Bluetooth Module	QOQ11

Analysis for FCC, portable use

Standalone SAR test exclusion considerations are defined in the KDB 447498 Chapter 4.3.1. 1-g head or body SAR exclusion threshold is defined with formula

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. separation distance, mm.})] * (\sqrt{f(\text{GHz})}) \leq 3$$

For BGM11S1A / BGM112A the absolute maximum TXP including tolerances 11.2 mW and maximum TX frequency is 2.48 GHz. Using separation distance of 6 mm with the formula above results

$$\left(\frac{11.22 \text{ mW}}{6 \text{ mm}} \right) * \sqrt{2.48} = 2.95 < 3$$

Thus BGM121 / BGM123 meets the SAR exclusion criteria with 6 mm separation. If the separation distance to human body is 6mm or more then SAR evaluation is not needed.

Worst case SAR has been measured and the SAR test report has been provided. At separation distance of 5mm the worst-case SAR result was 0.22 W/kg in body worn condition. Thus, in body worn applications, further SAR testing is not needed and the module can be placed in touch with human body.

Analysis for FCC, mobile use

$$S = \frac{E.I.R.P}{4\pi R^2} = \frac{11.22 \text{ mW}}{4\pi * (20 \text{ cm})^2} = 0.00189 \text{ mW} / \text{cm}^2$$

E.I.R.P (mW)	Evaluation distance R (cm)	Power density S at prediction frequency (mW/cm ²)	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²)	Verdict
11.22	20	0.00223	1	PASS