



## RF EXPOSURE ANALYSIS

<u>Product</u>	<u>FCC ID</u>
MGM111 802.15.4 Module	QOQMGM111

### 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

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

For MGM111 the maximum TX power including tolerances is 20 mW and maximum TX frequency is 2.48 GHz. Using separation distance of 10.5 mm with the formula above results

$$\left( \frac{20mW}{10.5mm} \right) * \sqrt{2.48} = 2.99 < 3$$

Thus MGM111 meets the SAR exclusion criteria with 10.5 mm separation distance and SAR evaluation is not needed if the separation distance to human body is 10.5 mm or more.

### Analysis for FCC, mobile use

$$S = \frac{E.I.R.P}{4\pi R^2} = \frac{33.9mW}{4\pi * (20cm)^2} = 0.00159mW / cm^2$$

E.I.R.P (mW)	Evaluation distance R (cm)	Power density S at prediction frequency (mW/cm <sup>2</sup> )	MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	Verdict
33.9	20	0.006744	1	PASS