RF EXPOSURE ANALYSIS

Product	FCC ID	IC Number
APx4 System-on-Module	QOQAPX4	5123A-BGTAPX4

Analysis for F

CC, 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

[(max . power of channel, including tune-up tolerance, mW)/(min. separation distance, mm.)]* (√f(GHz))≤3

For APx4 the maximum conducted TX power including tolerances is 40 mW and maximum TX frequency is 2.48 GHz. Using separation distance of 25 mm with the formula above results

$$\left(\frac{40mW}{25mm}\right) * \sqrt{2.48} = 2.5 < 3$$

Thus for portable use the SAR exclusion condition is fulfilled and SAR evaluation is not required for separation distance of 25 mm or more.

Analysis for FCC/IC, mobile use

Antenna integrated to the module has a maximum of 4dB gain when on a connector board, while the external antenna is allowed to have a maximum of 2.14dB of gain. Thus, the maximum radiated power is 16+4=20dBm, or 100mW.

$$S = \frac{E.I.R.P}{4\pi R^2} = \frac{100mW}{4\pi * (20cm)^2} = 0.020mW/cm^2$$

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
40	20	0.020	1	PASS

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