

RF EXPOSURE ANALYSIS

EQUIPMENT

Type of equipment: Bluetooth Low Energy Module
Type / Model: MBM1CC2640
Manufacturer: ASSA ABLOY AB
By request of: ASSA ABLOY AB

Operating range: 2402 – 2480 MHz

REQUIREMENT

EN 62479:2010
CFR 47 §1.1310
RSS-102 issue 5 (2015)
Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard
2014
NZS 2772.1

CALCULATIONS

Highest output power to antenna is -2.0 dBm peak.
With 1.1 dBi antenna gain EIRP is -0.9 dBm or 0.8 mW.
With a maximum duty cycle of 19.2% the average EIRP is $0.8 \times 0.192 = 0.1536$ mW.

LIMITS & EVALUATIONS:

Standard	Reference for limit	Limit	Unit	Values	Result
EN 62479	EN 62479 ¹	20	mW	0.8	PASS
CFR 47 §1.1310	KDB 447498 D01 ²	3.0	N/A	0.25	PASS
RSS-102 issue 5 (2015)	RSS-102 issue 5 (2015) ³	4	mW	0.8	PASS
Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014	EN 62479 ¹	20	mW	0.8	PASS
NZS 2772.1	NZS 2772.1 ⁴	20	mW	0.8	PASS

¹From Table A.1 for general public and head and trunk exposure.

²1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by: $[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$. Test separation distance is taken as 5 mm and maximum power is 0.8 mW at 2.445 GHz.

³Section 2.5.1, table 1, based on a separation distance of 5 mm and frequency of 2450 MHz.

⁴Section 8.6.3.2 says: The evaluation of mobile or portable transmitting equipment for compliance with this standard is not required where the nominal mean power output delivered to the antenna does not exceed 20 mW.

Summary:

All requirements are fulfilled

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