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RADIO TEST REPORT

Report ID
REP010589

Project ID
PRJ0034847

Type of assessment:
MPE Exemption report

Manufacturer:
Tyco Safety Products Canada Ltd.

Product Marketing Name (PMN):
Dual Tech Motion Detector

Hardware Version Identification Number (HVIN):
LC-203

HVIN/Model variant(s):
LC-204

FCC ID:
F5323LC2034

ISED certification number:
160A-LC2034

Specification:

- FCC 47 CFR Part 1 Subpart I, §1.1307, §1.1310
- FCC 47 CFR Part 2 Subpart J, §2.1091
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- ISED Canada RSS-102 Issue 5 Amendment 1 (February 2021)

Declaration of RF exposure compliance for exemption from routine evaluation limits

RSS-102 Annex C – Attestation:

I attest that the radiocommunication apparatus meets the exemption from the routine evaluation limits in Section 2.5 of RSS-102 standard; that the Technical Brief was prepared, and the information contained therein is correct; that the device evaluation was performed or supervised by me; that applicable measurement methods and evaluation methodologies have been followed; and that the device meets the SAR and/or RF field strength limits of RSS-102.

Date of issue: May 2, 2023

Alvin Liu, EMC/RF Specialist
Prepared by

Signature

Lab locations

Company name	Nemko Canada Inc.			
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Test site identifier	**Organization**	**Ottawa/Almonte**	**Montreal**	**Cambridge**
	FCC:	CA2040	CA2041	CA0101
	ISED:	2040A-4	2040G-5	24676
Website	www.nemko.com			

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.
This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contained in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

Copyright notification

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Section 1 Evaluation summary

1.1 MPE exemption for standalone transmission

1.1.1 References, definitions and limits

FCC §2.1091(c)

(1) Mobile devices that operate in the Commercial Mobile Radio Services pursuant to part 20 of this chapter; the Cellular Radiotelephone Service pursuant to part 22 of this chapter; the Personal Communications Services pursuant to part 24 of this chapter; the Satellite Communications Services pursuant to part 25 of this chapter; the Miscellaneous Wireless Communications Services pursuant to part 27 of this chapter; the Upper Microwave Flexible Use Service pursuant to part 30 of this chapter; the Maritime Services (ship earth station devices only) pursuant to part 80 of this chapter; the Specialized Mobile Radio Service, and the 3650 MHz Wireless Broadband Service pursuant to part 90 of this chapter; the 76-81 GHz Band Radar Service pursuant to part 95 of this chapter; and the Citizens Broadband Radio Service pursuant to part 96 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if:

(i) They operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more, or

(ii) They operate at frequencies above 1.5 GHz and their ERP is 3 watts or more.

(2) Unlicensed personal communications service devices, unlicensed millimeter-wave devices, and unlicensed NII devices authorized under §§15.255(f), 15.257(g), 15.319(i), and 15.407(f) of this chapter are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if their ERP is 3 watts or more or if they meet the definition of a portable device as specified in §2.1093(b) requiring evaluation under the provisions of that section.

(3) All other mobile and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§1.1307(c) and 1.1307(d) of this chapter.

RSS-102, Section 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where ƒ is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $0.0131\ f^{0.6834}$ W (adjusted for tune-up tolerance), where ƒ is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

1.1.2 EUT technical information

Operational frequency	10523 MHz
Antenna type	PCB micro strip patch
Antenna gain	0 dBi
Number of antennas	1
Maximum field strength @ 3 m	108.1 dBµV/m
Maximum EIRP	12.9 dBm (19.5 mW)

1.1.3 MPE exemption calculation

Fundamental transmit (prediction) frequency:	10523	MHz
Maximum calculated conducted peak output power:	12.9	dBm
Cable and/or jumper loss:	0	dB
Maximum peak power at antenna input terminal:	12.9	dBm
Tx On time:	0.012	ms
Tx period time:	0.100	ms
Average factor:	12.2	%
Maximum calculated average power at antenna input terminal:	2.3788104	mW
Single Antenna gain (typical):	0	dBi
Number of antenna:	1	
Total system gain:	0.00	dBi

	ISED limit		FCC limit	
MPE exemption limit:	**5.000000**	**W**	**3.000000**	**W**
Average EIRP at prediction frequency:	**2.379**	**mW**	**2.379**	**mW**
	0.002	W	0.002	W
Margin of Compliance:	**33.23**	**dB**	**31.01**	**dB**

Note: *Maximum calculated conducted peak power was achieved as follows: Field strength (dBµV/m @ 3 m) – 95.2 dB – 0 dBi

1.1.4 Verdict

The calculation of EIRP is below the exemption limit; therefore, the product is passing the RF Exposure exemption requirements.

End of the test report