RADIO TEST REPORT – 431081-APFWL

Type of assessment:

MPE Exemption report

Applicant:

Bosch Security Systems, Inc.

Product marketing name:

Wireless transceiver

Model (HVIN):

RFRP2

FCC ID:

TX3-RWS2

Specifications:

- FCC 47 CFR Part 1 Subpart I, §§1.1307, 1.1310
- FCC 47 CFR Part 2 Subpart J, §2.1091
- KDB 447498 D01 General RF Exposure Guidance v06

Date of issue: October 6, 2021

Kevin Rose, Senior EMC/RF Specialist
Prepared by

Signature

Lab locations

Company name	Nemko Canada Inc.			
Facilities	*Ottawa site:* 303 River Road Ottawa, Ontario Canada K1V 1H2 Tel: +1 613 737 9680 Fax: +1 613 737 9691	*Montréal site:* 292 Labrosse Avenue Pointe-Claire, Québec Canada H9R 5L8 Tel: +1 514 694 2684 Fax: +1 514 694 3528	*Cambridge site:* 1-130 Saltsman Drive Cambridge, Ontario Canada N3E 0B2 Tel: +1 519 650 4811	*Almonte site:* 1500 Peter Robinson Road West Carleton, Ontario Canada K0A 1L0 Tel: +1 613 256-9117

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.

1.1.2 EUT technical information

Type of EUT use	Normal
Minimum separation distance	20 cm
Highest operating frequency	433.42 GHz
Antenna type	Manufacturer: Bosch PCB with 2.15 dBd Gain. Model: RFRP2
Antenna gain	2.15 dBd
Maximum transmitter conducted power	NA
Maximum system ERP	-14.83 dBm (0.033 mW)

1.1.3 MPE exemption calculation

Fundamental transmit (prediction) frequency:	433.42	MHz
Maximum measured conducted peak output power:	5.31	dBm
Cable and/or jumper loss:	0	dB
Maximum peak power at antenna input terminal:	-14.83	dBm
Tx On time:	1.000	ms
Tx period time:	1.000	ms
Average factor:	100	%
Maximum calculated average power at antenna input terminal:	0.03288516	mW
Single Antenna gain (typical):	2.15	dBd
Number of antennae:	1	
Total system gain:	2.15	dBd
MPE exemption limit:	**1.500000**	**W**
Average EIRP at prediction frequency:	**0.054**	**mW**
	0.000	W
Margin of Compliance:	**44.44**	**dB**

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