

# RADIO TEST REPORT

Report ID:

**REP053062**

Project number:

**PRJ0057327**

Type of assessment:

**MPE Exemption report**

Manufacturer:

FLO Services USA Inc. / AddÉnergie Technologies Inc

Equipment description:

**Communication module**

Product Marketing Name (PMN):

**LBEE5CJ1XK**

Hardware Version Identification Number (HVIN):

**LBEE5CJ1XK**

FCC ID:

**2BF5L-LB1XK**

ISED certification number:

**32381-LB1XK**

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 6 (December 2023)

Declaration of RF exposure compliance for exemption from routine evaluation limits

Date of issue: September 18, 2024

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Prepared by



Signature

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ANAB File Number: AT-3195 (Ottawa); AT-3193 (Pointe-Claire); AT-3194 (Cambridge)

## Lab locations

Company name	Nemko Canada Inc.			
Facilities	<i>Ottawa site:</i>	<i>Montréal site:</i>	<i>Cambridge site:</i>	
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Test site registration	<b>Organization</b>	<b>Ottawa</b>	<b>Montreal</b>	<b>Cambridge</b>
	FCC:	CA2040	CA2041	CA0101
	ISED:	2040A-4	2040G-5	24676
Website	<a href="http://www.nemko.com">www.nemko.com</a>			

## 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.

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## Section 1 Evaluation summary

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### 1.1 MPE exemption for standalone transmission

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#### 1.1.1 References, definitions and limits

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##### 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 6.6

Field reference level (FRL) 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 (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP 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 EIRP of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP 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 EIRP of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP 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 EIRP was derived.

### 1.1.2 EUT technical information

Operational frequency	2462 MHz
Antenna type	Stamped metal Embedded
Antenna gain	1.7 dBi
Number of antennas	1
Maximum transmitter conducted power	24.50 dBm
Maximum EIRP	26.2 dBm

### 1.1.3 MPE exemption calculation

Fundamental transmit (prediction) frequency:	2462 MHz	
Maximum measured conducted peak output power:	24.5 dBm	
Cable and/or jumper loss:	0 dB	
Maximum peak power at antenna input terminal:	24.5 dBm	
Duty cycle:	100 %	
Maximum calculated average power at antenna input terminal:	281.8383 mW	
Single Antenna gain (typical):	1.7 dBi	
Number of antennae:	1	
Total system gain:	1.70 dBi	-0.44 dBd
	<u>ISED limit</u>	<u>FCC limit</u>
MPE exemption limit:	2.721934 W	3.000000 W
Average EIRP/ERP at prediction frequency:	416.869 mW	254.683 mW
	0.417 W	0.255 W
Margin of Compliance:	8.15 dB	10.71 dB

#### 1.1.4 EUT technical information (updated power)

Operational frequency	2462 MHz
Antenna type	Stamped metal Embedded
Antenna gain	1.7 dBi
Number of antennas	1
Used transmitter conducted power	19.0 dBm
Used EIRP	20.7 dBm

#### 1.1.5 MPE exemption calculation (updated power)

Fundamental transmit (prediction) frequency:	2462 MHz	
Maximum measured conducted peak output power:	19 dBm	
Cable and/or jumper loss:	0 dB	
Maximum peak power at antenna input terminal:	19 dBm	
Duty cycle:	100 %	
Maximum calculated average power at antenna input terminal:	79.432823 mW	
Single Antenna gain (typical):	1.7 dBi	
Number of antennae:	1	
Total system gain:	1.70 dBi	-0.44 dBd
	<u>ISED limit</u>	<u>FCC limit</u>
MPE exemption limit:	2.721934 W	3.000000 W
Average EIRP/ERP at prediction frequency:	117.490 mW	71.779 mW
	0.117 W	0.072 W
Margin of Compliance:	13.65 dB	16.21 dB

#### 1.1.6 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