

RADIO TEST REPORT – APFWL

Type of assessment:

MPE Exemption report

Manufacturer:

Current Lighting Solutions, LLC

Product description:

LightGrid Mesh Node Outdoor Wireless Control System

Hardware Version Identification Number (HVIN):

Lightgrid 2 Node

Product Marketing Name (PMN):

Lightgrid 2 Node

FCC ID:

2AS3F-90003

IC certification number:

25008-90003

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: June 17, 2022

Andrey Adelberg, Senior EMC/RF Specialist

Prepared by

Signature

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The tests included in this report are within the scope of this accreditation.
The SCC Accreditation Symbol is an official symbol of the Standards Council of Canada, used under licence.

SCC File Number: 15064 (Ottawa/Almonte); 151100 (Montreal); 151097 (Cambridge)

FCC and RSS-102 Annex C – MPE Exemption; Date: May 2021

Lab locations

| | | | | |
|----------------------|---|--|---|---|
| Company name | Nemko Canada Inc. | | | |
| Facilities | <i>Ottawa site:</i> 303 River Road Ottawa, Ontario Canada K1V 1H2 Tel: +1 613 737 9680 Fax: +1 613 737 9691 | <i>Montréal site:</i> 292 Labrosse Avenue Pointe-Claire, Québec Canada H9R 5L8 Tel: +1 514 694 2684 Fax: +1 514 694 3528 | <i>Cambridge site:</i> 1-130 Saltsman Drive Cambridge, Ontario Canada N3E 0B2 Tel: +1 519 650 4811 | <i>Almonte site:</i> 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.

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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 f 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 f 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 | 915 MHz |
| Antenna type | Non detachable wire antenna |
| Antenna gain | 2.7 dBi |
| Number of antennas | 1 |
| Maximum transmitter conducted power | 23.9 dBm (0.2455 mW) |

1.1.3 MPE exemption calculation

| | | |
|---|-------------------|------------------|
| Fundamental transmit (prediction) frequency: | 915 MHz | |
| Maximum measured conducted peak output power: | 23.9 dBm | |
| Cable and/or jumper loss: | 0 dB | |
| Maximum peak power at antenna input terminal: | 23.9 dBm | |
| Tx On time: | 1.000 ms | |
| Tx period time: | 1.000 ms | |
| Average factor: | 100 % | |
| Maximum calculated average power at antenna input terminal: | 245.47089 mW | |
| Single Antenna gain (typical): | 2.7 dBi | |
| Number of antennae: | 1 | |
| Total system gain: | 2.70 dBi | |
| | ISED limit | FCC limit |
| MPE exemption limit: | 1.383906 W | 1.500000 W |
| Average EIRP at prediction frequency: | 457.088 mW | 457.088 mW |
| | 0.457 W | 0.457 W |
| Margin of Compliance: | 4.81 dB | 5.16 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