

RADIO TEST REPORT – 464418APFWL

Type of assessment:

MPE Calculation report

Applicant:

Intracom S.A. Telecom Solutions

Product:

PtMP/PtP Gigabit Base Station Radio 27-29 GHz

Model:

WG5-EVO-BS-27-29

Brand:

WiBAS G5 evo-BS

FCC ID:

2AHZC-G5EVOBS2729

Specifications:

- ◆ 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

Date of issue: April 21, 2022

Andrey Adelberg, Senior EMC/RF Specialist

Prepared by



Signature

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

FCC MPE calculation; Date: May 2021

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Lab locations

| | | | | |
|-----------------------------|---|--|---|---|
| Company name | Nemko Canada Inc. | | | |
| Facilities | <i>Ottawa site:</i> 303 River Road Ottawa, Ontario Canada K1V 1H2 | <i>Montréal site:</i> 292 Labrosse Avenue Pointe-Claire, Québec Canada H9R 5L8 | <i>Cambridge site:</i> 1-130 Saltsman Drive Cambridge, Ontario Canada N3E 0B2 | <i>Almonte site:</i> 1500 Peter Robinson Road West Carleton, Ontario Canada K0A 1L0 |
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| Test site identifier | Organization | Ottawa/Almonte | Montreal | Cambridge |
| | FCC: ISED: | CA2040 2040A-4 | CA2041 2040G-5 | CA0101 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 calculation for standalone transmission

1.1.1 References, definitions and limits

FCC §2.1091(d)

(2) (2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b) of this part, except for portable devices as defined in §2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in §2.1093.

Table 1.1-1: Table 1 to §1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (i) Limits for Occupational/Controlled Exposure | | | | |
| 0.3–3.0 | 614 | 1.63 | *(100) | ≤6 |
| 3.0–30 | 1842 / f | 4.89 / f | *(900 / f ²) | <6 |
| 30–300 | 61.4 | 0.163 | 1.0 | <6 |
| 300–1500 | | | f / 300 | <6 |
| 1500–100000 | | | 5 | <6 |
| (ii) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3–1.34 | 614 | 1.63 | *(100) | <30 |
| 1.34–30 | 824 / f | 2.19 / f | *(180 / f ²) | <30 |
| 30–300 | 27.5 | 0.073 | 0.2 | <30 |
| 300–1500 | | | f / 1500 | <30 |
| 1500–100000 | | | 1.0 | <30 |

Notes: f = frequency in MHz. * = Plane-wave equivalent power density.

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (mW/cm² or W/m²)

P = power input to the antenna (mW or W)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm or m)

1.1.2 EUT technical information

| | |
|-------------------------------------|---------------------------|
| Prediction frequency | 28299 MHz |
| Antenna type | Low Profile WiBAS Antenna |
| Antenna gain | 42.8 dBi |
| Number of antennas | 1 |
| Maximum transmitter conducted power | 24.63 dBm (290 mW) |
| Prediction distance | 670 cm |

1.1.3 MPE calculation

| | |
|---|-----------------------------|
| Fundamental transmit (prediction) frequency: | 28299 MHz |
| Maximum measured conducted peak output power: | 24.63 dBm |
| Cable and/or jumper loss: | 0 dB |
| Maximum peak power at antenna input terminal: | 24.63 dBm |
| Tx On time: | 1.000 ms |
| Tx period time: | 1.000 ms |
| Average factor: | 100 % |
| Maximum calculated average power at antenna input terminal: | 290.4023 mW |
| Single Antenna gain (typical): | 42.8 dBi |
| Number of antennae: | 1 |
| Total system gain: | 42.80 dBi |
| MPE limit for uncontrolled exposure at prediction frequency: | 1.000000 mW/cm ² |
| 10.000000 W/m ² | |
| Minimum calculated prediction distance for compliance: | 664 cm |
| Typical (declared) distance: | 670 cm |
| Average power density at prediction frequency: | 0.980936 mW/cm ² |
| 9.809357 W/m ² | |
| Margin of Compliance: | 0.08 dB |
| Maximum allowable antenna gain: | 42.88 dBi |

1.1.4 Verdict

The calculation is below the limit; therefore, the product is passing the RF Exposure requirements for the declared distance.

End of the test report