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RADIO TEST REPORT

Type of assessment:

MPE Calculation report

Applicant:

SOLiD Inc.

Model:

eROU_17192325L1_N,
eROU_17192325L2_N

Product:

Edge Remote Optic Unit

FCC ID:

W6UER17192325N

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: September 23, 2024

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Prepared by

Signature

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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.

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Section 1 Evaluation summary

1.1 MPE calculation for simultaneous 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/cm^2 or W/m^2)
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

	Transmitter 1 (B25)	Transmitter 2 (B70)	Transmitter 3 (B65)	Transmitter 4 (B30)	Transmitter 5 (Band 41)
Prediction frequency	1995 MHz	2020 MHz	2200 MHz	2360 MHz	2690 MHz
Antenna type	Integrated	Integrated	Integrated	Integrated	Integrated
Antenna gain	3.3 dBi	3.3 dBi	4.86 dBi	4.97 dBi	4.4 dBi
Maximum transmitter conducted power	21.79 dBm (151 mW)	23.62 dBm (230 mW)	23.90 dBm (245 mW)	24.11 dBm (258 mW)	23.09 dBm (204 mW)
Prediction distance	20 cm	20 cm	20 cm	20 cm	20 cm

1.1.1 MPE calculation

	Transmitter 1	Transmitter 2	Transmitter 3	Transmitter 4	Transmitter 5
Fundamental transmit (prediction) frequency:	1995 MHz	2020 MHz	2200 MHz	2360 MHz	2690 MHz
Maximum measured conducted peak output power:	21.79 dBm	23.62 dBm	23.9 dBm	24.11 dBm	23.09 dBm
Cable and/or jumper loss:	0 dB	0 dB	0 dB	0 dB	0 dB
Maximum peak power at antenna input terminal:	21.79 dBm	23.62 dBm	23.9 dBm	24.11 dBm	23.09 dBm
Tx On time:	1.000 ms	1.000 ms	1.000 ms	1.000 ms	1.000 ms
Tx period time:	1.000 ms	1.000 ms	1.000 ms	1.000 ms	1.000 ms
Average factor:	100 %	100 %	100 %	100 %	100 %
Maximum calculated average power at antenna input terminal:	151.00802 mW	230.14418 mW	245.47089 mW	257.6321157 mW	203.7042078 mW
Single Antenna gain (typical):	3.3 dBi	3.3 dBi	4.86 dBi	4.97 dBi	4.4 dBi
Number of antennae:	1	1	1	1	1
Total system gain:	3.30 dBi	3.30 dBi	4.86 dBi	4.97 dBi	4.40 dBi
MPE limit for uncontrolled exposure at prediction frequency:	**1.000000 mW/cm²**	**1.000000 mW/cm²**	**1.000000 mW/cm²**	**1.000000 mW/cm²**	**1.000000 mW/cm²**
	10.000000 W/m²	10.000000 W/m²	10.000000 W/m²	10.000000 W/m²	10.000000 W/m²
Minimum calculated prediction distance for compliance:	20 cm	20 cm	20 cm	20 cm	20 cm
Typical (declared) distance:	20 cm	20 cm	20 cm	20 cm	20 cm
Average power density at prediction frequency:	**0.064229 mW/cm²**	**0.097888 mW/cm²**	**0.149531 mW/cm²**	**0.160965 mW/cm²**	**0.111617 mW/cm²**
	0.642288 W/m²	0.978882 W/m²	1.495306 W/m²	1.609645 W/m²	1.116169 W/m²
Combined MPE compliance:					
Margin of Compliance:	**11.92 dB**	**10.09 dB**	**8.25 dB**	**7.93 dB**	**9.52 dB**
Maximum allowable antenna gain:	15.22 dBi	13.39 dBi	13.11 dBi	12.90 dBi	13.92 dBi
Average power density to MPE limit ratio:	0.064	0.098	0.150	0.161	0.112
Total sum of ratios:	0.584				
Maximum allowed sum of ratios:	1				

1.1.2 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