

Assessment Report

REP011703-3R2ARFWL

Type of assessment:

MPE Calculation report

Applicant:

SOLiD

Product

C-Band Radio

Model

SOLiD O-RAN C-band Radio Unit

Model Variants

None

FCC ID:

W6UOLRUCBANDM4

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

Date of issue: April 12, 2024

James Cunningham, EMC/WL Manager

Prepared by



Signature



Lab locations=

Company name	Nemko USA Inc.
Address	2210 Faraday Ave, Suite 150
City	Carlsbad
State	California
Postal code	92008
Country	USA
Telephone	+1 760 444 3500
Website	www.nemko.com
FCC Site Number	Test Firm Registration Number: 392943 Designation Number: US5058
ISED Test Site	2040B-3

Prepared by	James Cunningham, EMC/WL Manager
Date	April 12, 2024
Signature	

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 contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.
This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, NIST, or any agency of the U.S. Government.

Copyright notification

Nemko USA Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.
© Nemko USA Inc.



Table of Contents

Table of Contents	3
Section 1 Evaluation summary	4
1.1 MPE calculation for standalone transmission	4

Section 1 Evaluation summary

1.1 MPE calculation for standalone transmission

1.1.1 References, definitions, and limits

FCC §2.1091(d)

- (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	3700 MHz
Antenna type	Integrated
Antenna gain	5.5 dBi
Number of antennas	4
Maximum transmitter conducted power	24 dBm rated power per port (251 mW)
Prediction distance	20 cm

1.1.3 MPE calculation

Fundamental transmit (prediction) frequency:	3700 MHz
Maximum measured conducted peak output power:	24 dBm
Cable and/or jumper loss:	0 dB
Maximum peak power at antenna input terminal:	24 dBm
Tx On time:	1.000 ms
Tx period time:	1.000 ms
Average factor:	100 %
Maximum calculated average power at antenna input terminal:	251.1886432 mW
Single Antenna gain (typical):	5.5 dBi
Number of antennae:	4
Total system gain:	11.52 dBi
FCC limit:	
MPE limit for uncontrolled exposure at prediction frequency:	1.000000 mW/cm ²
	10.000000 W/m ²
Minimum calculated prediction distance for compliance:	20 cm
Typical (declared) distance:	20 cm
Average power density at prediction frequency:	
	0.709235 mW/cm ²
	7.092350 W/m ²
Margin of Compliance:	
Maximum allowable antenna gain:	13.01 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 report