

RF Exposure Report

Application No.: SZCR2507003219AT
Applicant: LED Roadway Lighting Ltd.
Address of Applicant: 84 Chain Lake Drive, Suite 403, Halifax, Nova Scotia, B3S 1A2 Canada
Manufacturer: LED ROADWAY LIGHTING LTD.
Address of Manufacturer: 21 Tantram Crescent, Amherst, Nova Scotia, Canada, B4H 4S8
Factory: LED ROADWAY LIGHTING LTD.
Address of Factory: 21 Tantram Crescent, Amherst, Nova Scotia, Canada, B4H 4S8
Equipment Under Test (EUT):
EUT Name: Radar sensor
Model No.: B870-RD
Trade Mark: SLX-RADAR
FCC ID: 2ACR3-B870RD
Standard(s) : FCC Rules 47 CFR §2.1091
Date of Receipt: KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Test: 2025-07-22
Date of Issue: 2025-07-27 to 2025-08-28
Date of Issue: 2025-09-01

Test Result:	Pass*
---------------------	--------------

* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
 中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250700321902

Page: 2 of 9

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-09-01		Original

Authorized for issue by:				
		Leo Li		
		Leo Li/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center-LCC Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

1 Contents

Page

1	Contents	3
2	General Information.....	4
2.1	General Description of E.U.T.....	4
2.2	Details of E.U.T.....	4
2.3	Separation Distance	5
2.4	Test Location.....	6
2.5	Test Facility.....	6
3	FCC Radiofrequency radiation exposure limits	7
4	Measurement and Calculation	8
4.1	Maximum transmit power.....	8
4.2	MPE Calculation Formula	8
4.3	Test Results	9



2 General Information

2.1 General Description of E.U.T.

Product Type:	<input type="checkbox"/> Portable device
	<input checked="" type="checkbox"/> Mobile device
	<input type="checkbox"/> Fixed device

2.2 Details of E.U.T.

Power supply:	AC 120V/60Hz
Operation Frequency:	24.075-24.175GHz
Modulation:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	12.2dBi



2.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	



2.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

2.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd.

Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



3 FCC Radiofrequency radiation exposure limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
1500-100,000	/	/	5	6
(B) 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
1500-100,000	/	/	1.0	30

F=frequency in MHz
 *=Plane-wave equivalent power density
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



4 Measurement and Calculation

4.1 Maximum transmit power

The Power Data is based on the RF Test Report SZCR250700321901

Test Mode	Channel [GHz]	dBuV/m @ 0.5m	E.I.R.P. Power (dBm)	E.I.R.P. Power (mW)
Tx mode	24.14430	118.108	7.318	5.39

Remark:

$E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$, where E = field strength and d = distance at which field strength limit is specified in the rules

$\text{EIRP}[\text{dBm}] = E[\text{dB}\mu\text{V}/\text{m}] + 20 \log(d[\text{meters}]) - 104.77$

Antenna Gain=12.2dBi

4.2 MPE Calculation Formula

$P_d = (P_{\text{out}} * G) / 4\pi R^2$

Where:

P_d = Power density in mW/cm²

P_{out} = Output power to antenna in mW

G = Antenna Gain in linear scale

$\pi = 3.1416$

R = distance to the center of radiation of antenna (in meter) = 20cm

4.3 Test Results

Max. E.I.R.P. P(mW)	Operation Distance R(cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
5.39	20	0.00107	1	Pass

Which is below the max permitted sending level of 10W/m².

Simultaneous transmission

Σ ratios of simultaneous transmitting= LTE + 24G radar:

Ratio of Power Density (W/m ²) of LTE at R = 20 cm	Ratio of Power Density (mW/cm ²) of 24G radar at R = 20 cm	Total ratios of simultaneous transmitting at R =20cm	Limit	Result
0.551	0.00107	0.55207	1.0	PASS

Σ MPE Ratio = Max (HL7800 LTE module MPE ratio) + Max (24GHz Radar MPE ratio)
=0.551+0.00107=0.55207

Note 2: the maximum ISED Power Density MPE Ratio is 0.551 which provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

The EUT meet the Exemption Limits for Routine Evaluation – SAR Evaluation, so no SAR evaluation is required for the EUT.

- End of the Report -