



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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250600252604

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RF Exposure Evaluation Report

Application No.: SZCR2506002526AT
Applicant: Emlid Tech Kft.
Address of Applicant: Esztergomi way 31-39, HUB 3 building, 5 floor, 1138 Budapest, Hungary
Manufacturer: NexPCB Limited
Address of Manufacturer: Room 605A, TCL Industrial Centre, 8 Tai Chung Road, Tsuen Wan, Hong Kong
Factory: Ningbo High-tech Zone Ladder Science co., Ltd
Address of Factory: No. 4-1, 5-1, 6-1, Building 3, No. 3, Lane 215, Qingyi Road, Ningbo High-tech Zone, Zhejiang Province

Equipment Under Test (EUT):
Product Name: Dual-band radio module
Model No.: WL1
Trade mark: EMLID
FCC ID: 2BAYEWL1
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
Date of Receipt: 2025-06-13
Date of Test: 2025-06-17 to 2025-08-29
Date of Issue: 2025-08-29

Test Result :	PASS*
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* 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

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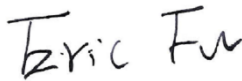
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-08-29		Original

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



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3 General Information

3.1 General Description of EUT

Power supply:	DC 5V,2.1A
For Lora	
Operation Frequency:	902.9MHz to 927.5MHz
Modulation Type:	CSS
Number of Channels:	42 Channels
Channel Spacing:	500KHz
Antenna Type:	Terminal Antenna
Antenna Gain:	2.5dBi
For UHF	
Frequency Range:	410.125MHz-469.125MHz
Modulation Type:	GMSK
Channel separation:	12.5KHz/25KHz
Rate output Power:	500mW/1000mW/2000mW
Antenna Type:	Monopole Antenna
Antenna Gain:	2.94dBi



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3.2 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, Shenzhen, Guangdong, China. 518057.

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

No tests were sub-contracted.

3.3 Test Facility

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

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• 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

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. 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: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

• 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.



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3.4 Deviation from Standards

None.

3.5 Abnormalities from Standard Conditions

None.

3.6 Other Information Requested by the Customer

None.



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4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 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)
(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

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

For Uncontrolled Environment, the MPE limit of VHF and Lora is f/1500 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.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



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4.1.3 EUT RF Exposure Evaluation

For UHF Transmitter:

The maximum rated power is 2W(Max Tune-up power is 2.23872W), the low rated power is 0.5W(Max Tune-up power is 0.56234W) which declared by manufacturer.

To satisfy RF exposure requirements, a separation distance of 35.8cm or more should be maintained between this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

The minimum distance between this device and persons during device operation is 50 cm which declared by manufacturer. Through the calculation, the maximum power density at 50cm is:

$$Pd = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (2238.72 \cdot 1.98) / (4 \cdot 3.1416 \cdot 50^2) = 0.1402 \text{ mW/cm}^2 \leq 410.125/1500 = 0.2734 \text{ mW/cm}^2$$

For Lora:

The best case gain of the antenna is 2.5dBi. 2.5dB logarithmic terms convert to numeric result is nearly 1.78

The max tune-up tolerance power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max tune-up tolerance power(dBm)	Max tune-up Tolerance power to Antenna (mW)	Power Density at R = 50cm (mW/cm ²)	Limit	MPE Ratio	Result
High	927.5	26.98	498.88	0.0282	0.6019	0.0469	PASS

The Lora antenna and the UHF antenna cannot transmit at the same time.

Since the SAR Exclusion Threshold Level is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

- End of the Report -



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