RF Exposure Evaluation Report

Product	:	RTK GNSS receiver
Trade mark	:	EMLID
Model/Type reference	:	REACH RS3
Serial Number	:	N/A
Report Number	:	EED32P80561206
FCC ID	:	2BAYERCH205
Date of Issue	:	Jun. 25, 2023
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 1.1310 47 CFR Part 2.1093(portable devices) 447498 D04 Interim General RF Exposure Guidance v01
Test result	:	PASS

Prepared for:

Emlid Tech Kft.

Raday utca 33/A, 1st floor, 3rd door, Budapest,1092, Hungary

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
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	Aaron Ma		

Check No.::4815210423

2 Contents

3 General Information

3.1 Client Information

Applicant:	Emlid Tech Kft
Address of Applicant:	Raday utca 33/A, 1st floor, 3rd door, Budapest,1092, Hungary
Manufacturer:	Ningbo High-tech Zone Ladder Science co., Ltd
Address of Manufacturer:	3/F, Building #1, Zone B, No.428 Dongqing Road, High-tech Zone, Ningbo City, Zhejiang Province
Factory:	Ningbo High-tech Zone Ladder Science co., Ltd
Address of Factory:	3/F, Building #1, Zone B, No.428 Dongqing Road, High-tech Zone, Ningbo City, Zhejiang Province
Product Name:	RTK GNSS receiver
Model No.:	REACH RS3
Trade mark:	EMLID

Remark:
Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

3.2 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

3.3 Deviation from Standards

None.

3.4 Abnormalities from Standard Conditions

None.

3.5 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).
This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula

$$P_{\text{th}}\,(\text{mW}) = \begin{cases} ERP_{20\text{ cm}}(d/20\text{ cm})^{x} & d \le 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \le 40\text{ cm} \end{cases}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\text{ cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1).

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\text{ cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \le f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \le f \le 6\text{ GHz} \end{cases} \qquad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

4.1.2 Test Procedure

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

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

Mode	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
BLE	7.53	0.50	5.88	3.8726	3060.0000	0.0013	PASS
BT Classic	5.27	0.50	3.62	2.3014	3060.0000	0.0008	PASS
2.4G WIFI	24.00	0.50	22.35	171.7908	3060.0000	0.0561	PASS
2G	33.57	-1.64	29.78	950.6048	1731.5520	0.5490	PASS
3G	24.53	-1.64	20.74	118.5769	1727.0640	0.0687	PASS
4G	23.66	2.26	23.77	238.2319	3060.0000	0.0779	PASS
LORA	26.19	2.02	26.06	403.6454	1892.1000	0.2133	PASS

Note：

①EIRP=conducted power+antenna gain；

②ERP=EIRP-2.15

③The test data come from the report of EED32P80561201,EED32P80561202,EED32P80561203, EED32P80561204,EED32P80561205.And only the worst case data was recorded in the report.

④The separation distance is 20cm.

For Simultaneous Transmission:

As MPE rato (2.4G WIFI+2G+LORA)=0.0561+0.5490+0.2133=0.8184＜ 1,

it’s deemed to fulfil the RF exposure requirement.

*** End of Report ***